Service Manual

ViewSonic VE510s-4
VE510b-4

Model No. VLCDS27996-2W

VLCDS27996-3W

15” Color TFT LCD Display

(VE510s-4_VE510b-4_SM Rev. 1a Dec. 2005)

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Revision History

Revision	SM Editing Date	ECR Number	Description of Changes	Editor
1a	12/02/05		Initial Release	Jamie Chang

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1. Precautions and Safety Notices (VE510s-4/VE510b-4)

1.1. SAFETY PRECAUTIONS

This monitor is manufactured and tested on a ground principle that a user's safety comes first. However, improper use or installation may cause damage to the monitor as well as to the user. Carefully go over the following WARNINGS before installing and keep this guide handy.

WARNINGS:

- This monitor should be operated only at the correct power sources indicated on the label on the rear end of the monitor. If you're unsure of the power supply in your residence, consult your local dealer or power company.
- Use only the special power adapter that comes with this monitor for power input.
- Do not try to repair the monitor your self as it contains no user-serviceable parts. This monitor should only be repaired by a qualified technician.
- Do not remove the monitor cabinet. There is high-voltage parts inside that may cause electric shock to human bodies, even when the power cord is unplugged.
- Stop using the monitor if the cabinet is damaged. Have it checked by a service technacian.
- Put your monitor only in a clean, dry environment. If it gets wet, unplug the power cable immediately and consult your service technician.
- Always unplug the monitor before cleaning it. Clean the cabinet with a clean, dry cloth. Apply non-ammonia based cleaner onto the cloth, not directly onto the glass screen.
- Keep the monitor away from magnetic objects, motors, TV sets, and transformer.
- Do not place heavy objects on the monitor or power cord.

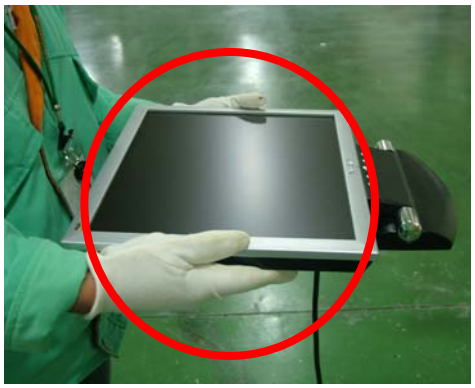
1.2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltages, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

1.3. SERVICE NOTES

1. When replacing parts or circuit boards, clamp the lead wires around terminals before soldering.
2. When replacing a high wattage resistor (more than 1W of metal oxide film resistor) in circuit board, keep the resistor about 5mm away from circuit board.
3. Keep wires away from high voltage, high temperature components and sharp edges.
4. Keep wires in their original position so as to reduce interference.
5. Usage of this product please refer to also user's manual.

1.4. HANDLING AND PLACING METHODS

Correct Methods:	Incorrect Methods:
Only touch the metal frame of the LCD panel or the front cover of the monitor. Do not touch the surface of the polarizer.	Surface of the LCD panel is pressed by fingers and that may cause “Mura”
	
Take out the monitor with cushions	Taking out the monitor by grasping the LCD panel. That may cause “Mura”

<table>
<tr><td>Place the monitor on a clean and soft foam pad.</td><td>Placing the monitor on foreign objects. That could scratch the surface of the panel or cause “Mura”</td></tr>
<tr><td> </td><td> </td></tr>
<tr><td></td><td>The panel is placed facedown on the lap. That may cause “Mura”</td></tr>
<tr><td></td><td> </td></tr>
</table>

2. Specification

2.1. PRODUCT SPECIFICATION

LCD Panel	15.0" TFT
Power Management	Energy Star compliant VESA DPMS compatible < 1W
Displayable Resolution	XGA 1024× 768 (max.)
Pixel Dimension	0.297× 0.297mm
LCD Display Color	16.2M Color Max. (8bit)
Viewing Angle	CR≥10 Horizontal: 130° Vertical: 100°
TILT	-5°~ -25°
Contrast Ratio	400: 1 (min.) 500: 1 (typ.)
Brightness	200 cd/m^2 (min.) 250 cd/m^2 (typ.)
Response Time	Tr + Tf : 16ms (typ.)
Active Display Area	304.1mm× 228.1mm
Temperature	Operating: 0°C ~ +35°C Storage: -20°C ~ +60°C
Power	Input Voltage: 100~240 Vac Consumption: 30 Watts (Max.)

2.2. SUPPORTING TIMING CHART

ITEM	1	2	3	4	5
TIMING	640×350@70Hz	640×480@60Hz	640×480@67Hz	640×480@75Hz	640×480@72Hz
Pixel Rate	25.175MHz	25.175MHz	30.240MHz	31.500MHz	31.500MHz
H TOTAL	31.778us	31.778us	28.571us	26.667us	26.413us
H DISPLAY	25.422us	25.422us	21.164us	20.317us	20.317us
H B-Porch	1.907us	1.907us	3.175us	3.810us	4.063us
H Width	3.813us	3.813us	2.116us	2.032us	0.270us
H Border	0.318us	0.318us	0.000us	0.000us	0.000us
V TOTAL	14.268ms	16.683ms	15.000ms	13.334ms	13.734ms
V DISPLAY	11.122ms	15.253ms	13.714ms	12.800ms	12.678ms
V B-Porch	1.907ms	1.049ms	1.114ms	0.427ms	0.528ms
Vs Width	0.064ms	0.064ms	0.086ms	0.080ms	0.079ms
V Border	0.191ms	0.254ms	0.000ms	0.000ms	0.000ms
H/V Sync	+/-	-/-	-/-	-/-	-/-
Interlace	No.	No.	No.	No.	No.

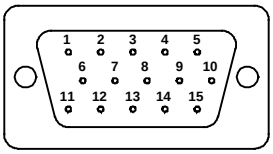
ITEM	6	7	8	9	10
TIMING	640×480@85Hz	720×400@70Hz	800×600@56Hz	800×600@60Hz	800×600@72Hz
Pixel Rate	36.000MHz	28.322MHz	36.000MHz	40.000MHz	50.000MHz
H TOTAL	22.111us	31.778us	28.444us	26.400us	20.800us
H DISPLAY	17.778us	25.422us	22.222us	20.000us	16.000us
H B-Porch	2.222us	1.907us	3.556us	2.200us	1.280us
H Width	1.556us	3.813us	2.000us	3.200us	2.400us
H Border	0.000us	0.318us	0.000us	0.000us	0.000us
V TOTAL	11.764ms	14.268ms	17.778ms	16.579ms	13.853ms
V DISPLAY	11.093ms	12.711ms	17.066ms	15.840ms	12.480ms
V B-Porch	0.578ms	1.112ms	0.626ms	0.607ms	0.478ms
Vs Width	0.069ms	0.064ms	0.057ms	0.106ms	0.125ms
V Border	0.000ms	0.222ms	0.000ms	0.000ms	0.000ms
H/V Sync	-/-	-/+	+/+	+/+	+/+
Interlace	No.	No.	No.	No.	No.

ITEM	11	12	13	14	15
TIMING	800×600@75Hz	800×600@85Hz	832×624@74.5Hz	1024×768@60Hz	1024×768@70Hz
Pixel Rate	48.500MHz	56.250MHz	57.280MHz	65.000MHz	75.000MHz
H TOTAL	21.333us	18.631us	20.112us	20.677us	17.707us
H DISPLAY	16.162us	14.222us	14.525us	15.754us	13.653us
H B-Porch	3.232us	2.702us	3.771us	2.462us	1.920us
H Width	1.616us	1.138us	1.118us	2.092us	1.813us
H Border	0.000us	0.000us	0.000us	0.000us	0.000us
V TOTAL	13.333ms	11.756ms	13.417ms	16.666ms	14.272ms
V DISPLAY	12.800ms	11.179ms	12.552ms	15.880ms	13.599ms
V B-Porch	0.448ms	0.503ms	0.784ms	0.600ms	0.513ms
Vs Width	0.064ms	0.056ms	0.060ms	0.124ms	0.106ms
V Border	0.000ms	0.000ms	0.00ms	0.000ms	0.000ms
H/V Sync	+/+	+/+	-/-	-/-	-/-
Interlace	No.	No.	No.	No.	No.

ITEM	16	17			
TIMING	1024×768@72Hz	1024×768@75Hz			
Pixel Rate	77.066MHz	78.750MHz			
H TOTAL	17.232us	16.660us			
H DISPLAY	13.287us	13.003us			
H B-Porch	1.869us	2.235us			
H Width	1.765us	1.219us			
H Border	0.000us	0.000us			
V TOTAL	13.889ms	13.328ms			
V DISPLAY	13.234ms	12.795ms			
V B-Porch	0.500ms	0.466ms			
Vs Width	0.103ms	0.050ms			
V Border	0.000ms	0.000ms			
H/V Sync	-/-	+/+			
Interlace	No.	No.			

2.3. D-SUB CONNECTOR

D-SUB 15 PIN CONNECTOR



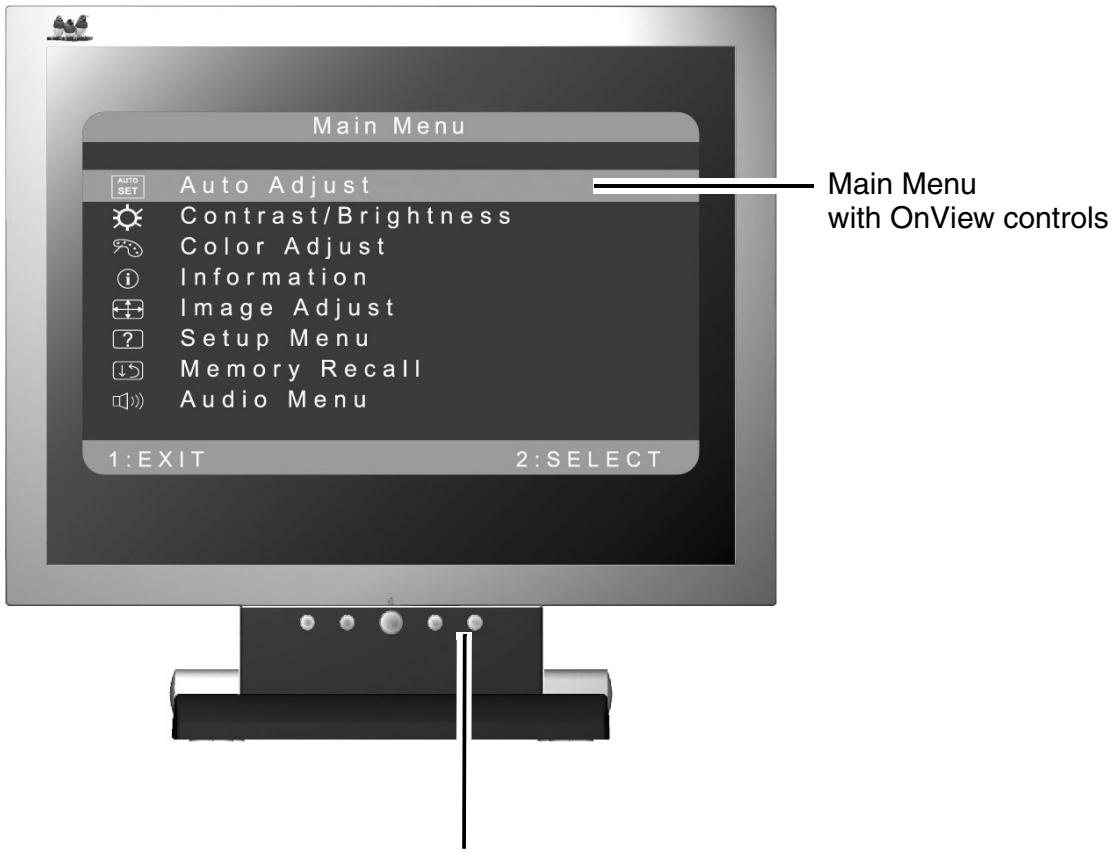
1.Red Video	**6.Red GND**	**11.NC**
2.Green Video	**7.Green GND**	**12.SDA**
3.Blue Video	**8.Blue GND**	**13.H-sync**
4.NC	**9. +5V for DDC**	**14.V-sync**
5.GND	**10.GND**	**15.SCL**

SIGNAL LEVEL

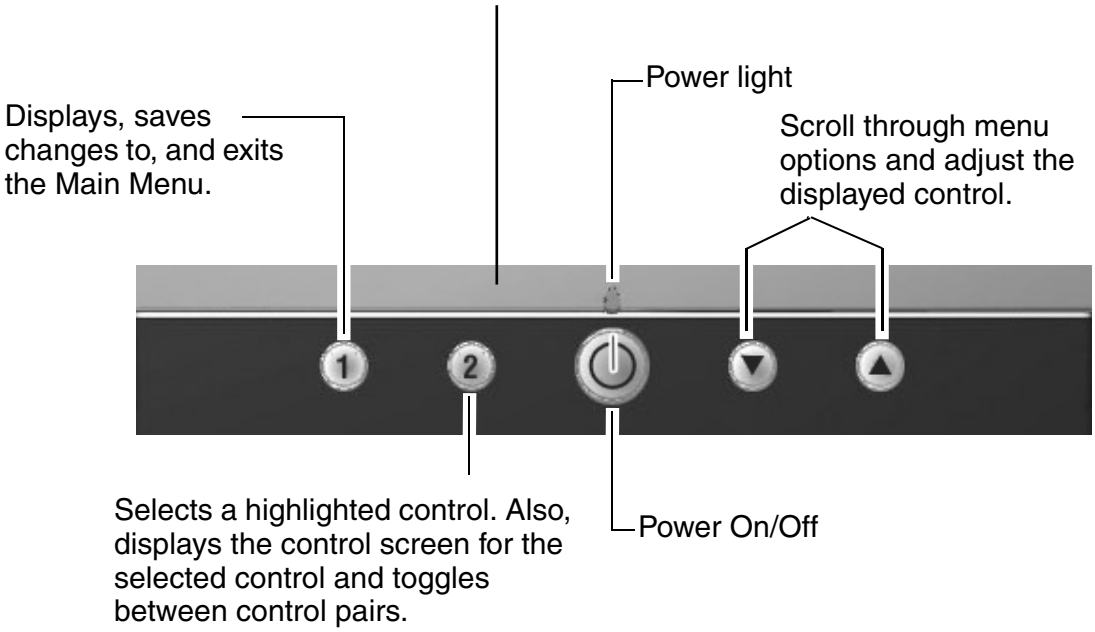
CONNECTOR	SIGNAL	DESCRIPTION
R	RED	0.7vp-p(VIDEO)
G	GREEN	0.7vp-p(VIDEO)
B	BLUE	0.7vp-p(VIDEO)
H	H/SYNC	TTL positive or negative
V	V/SYNC	TTL positive or negative
SDA	DDC1/2B	TTL
SCL	DDC1/2B	TTL

3. Front Panel Function Control Description

VE510s-4/VE510b-4

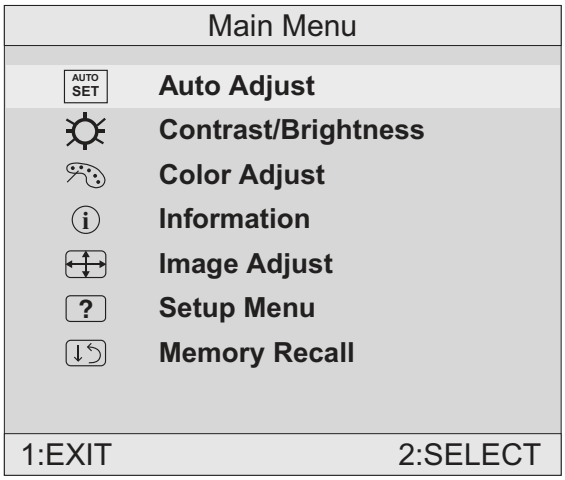


Front Control Panel


Displays, saves changes to, and exits the Main Menu.
Power light
Scroll through menu options and adjust the displayed control.
1
2
Selects a highlighted control. Also, displays the control screen for the selected control and toggles between control pairs.
Power On/Off

Do the following to adjust the screen image:

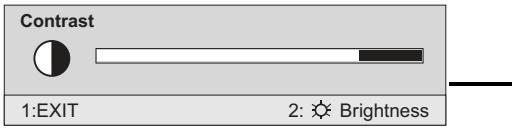
1 To display the Main Menu, press button [1].



NOTE: All OnView menus and adjustment screens disappear automatically after about 15 seconds. This time period is adjustable through the Setup menu and the OSD timeout control described on page 11.

2 To highlight a control you want to adjust, press ▲ or ▼ to scroll up or down the Main Menu.

3 To select the highlighted control, press button [2]. A control screen appears like the example shown below.



The line at the bottom of the screen tells you what you can do next: Exit or Select the control that is highlighted.

4 To adjust the control, press the up ▲ or down ▼ buttons.

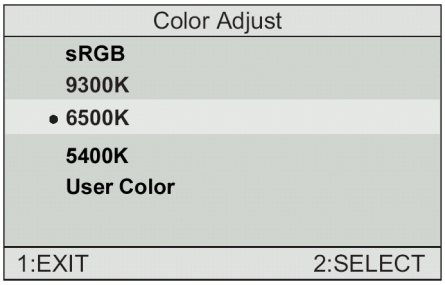
5 To save the adjustments and exit the menu, press button [1] *twice*.

The following tips may help you optimize your display:

- Adjust your computer's graphic card so that it outputs a video signal 1024 x 768 @ 60 Hz to the LCD display. (Look for instructions on "changing the refresh rate" in your graphic card's user guide.)
- If necessary, make small adjustments using H. POSITION and V. POSITION until the screen image is completely visible. (The black border around the edge of the screen should barely touch the illuminated "active area" of the LCD display.)

Main Menu Controls

Adjust the menu items shown below by using the up ▲ and down ▼ buttons.

Control	Explanation
AUTO SET	**Auto Adjust** automatically sizes, centers, and fine tunes the video signal to eliminate waviness and distortion. Press the [2] button to obtain a sharper image. **NOTE:** Auto Adjust works with most common video cards. If this function does not work on your LCD display, then lower the video refresh rate to 60 Hz and set the resolution to its pre-set value.
	Contrast adjusts the difference between the image background (black level) and the foreground (white level).
	Brightness adjusts background black level of the screen image.
	Color Adjust provides several color options: preset color temperatures and User which allows you to adjust red (R), green (G), and blue (B). The factory setting for this product is 6500K (6500 Kelvin).  **sRGB —** sRGB is quickly becoming the industry standard for color management, with support being included in many of the latest applications. Enabling this setting allows the LCD display to more accurately display colors the way they were originally intended. Enabling the sRGB setting will cause the Contrast and Brightness adjustments to be disabled. **9300K** — Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting). **6500K** — Adds red to the screen image for warmer white and richer red. **5400K** — Adds green to the screen image for a darker color.

User Color — Individual adjustments for red (R), green (G), and blue (B).

1 To select color (R, G or B) press button [2].
2 To adjust selected color, press ▲ or ▼.

Important: If you select RECALL from the Main Menu when the product is set to a Preset Timing Mode, colors return to the 6500K factory preset.

Information displays the timing mode (video signal input) coming from the graphics card in your computer. See your graphic card's user guide for instructions on changing the resolution and refresh rate (vertical frequency).

VESA 1024 x 768 @ 60 Hz (recommended) means that the resolution is 1024 x 768 and the refresh rate is 60 Hertz.

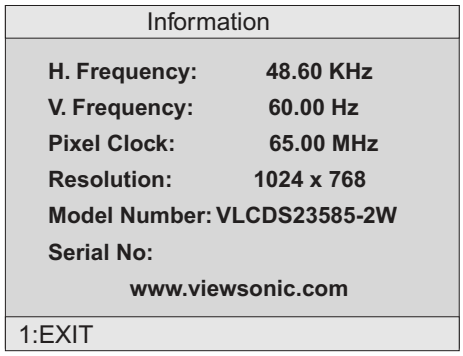
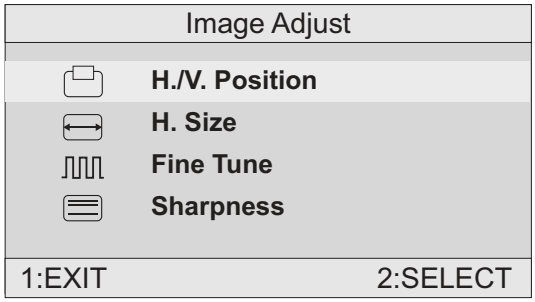


Image Adjust



The Image Adjust controls are explained below:

H./V. Position adjusts horizontal and vertical position of the screen image. You can toggle between Horizontal and Vertical by pressing button [2]. Horizontal moves the screen image to the left or to the right. Vertical moves the screen image up and down.

H. Size (Horizontal Size) adjusts the width of the screen image.

NOTE: Vertical size is automatic with your LCD display.

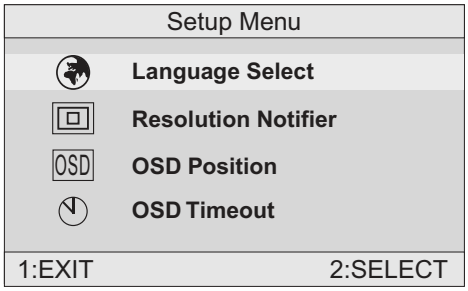
Control	Explanation

Fine Tune sharpens focus by aligning the illuminated text and/or graphic characters.

NOTE: Try the **Auto Adjust** before using the **Fine Tune** control.

Sharpness adjusts the clarity and focus of the screen image.

Setup Menu displays the menu shown below.



The Setup Menu controls are explained below.

Language Select allows you to choose the language used in the menus and control screens.

Resolution Notice advises the optimal resolution to use.

OSD Position allows you to move the on-screen display menus and control screens.

OSD Timeout sets the length of time an on-screen display screen is displayed. For example, with a “15 second” setting, if a control is not pushed within 15 seconds, the display screen disappears.

Control	Explanation
	Memory Recall returns adjustments to the original factory settings if the display is operating in a factory Preset Timing Mode listed in this user guide.

Short Cut Key

Function Key : 5 Keys → 1 2 ⏻ ▼ ▲

[1]	**Main Menu**
[2]	**Auto Image Adjust**
[▼] or [▲]	**to immediately activate Contrast menu. It should be change to Brightness OSD by push button [2].**
[▼] + [▲]	**recall Contrast or Brightness while in the Contrast or Brightness adjustment, or recall both of Contrast and Brightness when the OSD is not open.**
[1] + [2]	**toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode.**
[1] + [▼] + [▲] **(Keep pushing 5 sec)**	**White Balance.**
[1] + [▼]	**Power Lock**
[1] + [▲]	**OSD Lock**

4. Circuit Description (VE510s-4/VE510b-4)

A. AC-DC CONVERTER

The power supply with a high-integrated green-mode PWM controller provides several features to enhance the performance of power flyback converters.
I801 is a PWM controller and provides many protection functions.
I802 is a photo couple to transfer the feedback signal from the second side which I803 detected both of the output DC voltage on 3.3V and 12V.
D813 detected the working voltage on I801 and Q805 would pull down the voltage on I801 pin5 to shut down I801 if feedback loop was failed.
R826 would be a dynamic load which was active while backlight was turned off and system still working on, this kept 12V output voltage under 13V to protect the panel. After system went to power saving mode, the R826 would no loaded. This was detected by I804 and Q803 active the R826 to load or not.

B. Scaling controller

The RTD2013 ADC is to convert RGB analog signal to digital signal that scaling chip can acknowledge.
The HSYNC input receives a logic signal and provides the frequency reference for pixel clock generation.
The scaling IC is to converts the input signal ranging from VGA to XGA into XGA resolution that panel can acknowledge.

General

- . Embedded dual DDC support DDC1, DDC2B,DDC/CI
- . Zoom scaling up and down
- . Embedded Pattern Generator
- . No external memory required.
- . Require only one crystal to generate all timing
- . Embedded reset control output
- . Embedded crystal output to MICROP
- . 3 channels 8 bits PWM output, and selectable PWM clock frequency.

PIN DESCRIPTION

(I/O Legend: A= Analog , I=Input ,O=Output ,P=Power ,G=Ground)

■ ADC: 15 pins

Name	I/O	Pin No	Description	Note
ADC_GND	AG	27	ADC ground	
ADC_REFIO	AP	28	ADC band-gap voltage de-coupling	1.20V
ADC_VDD	AP	29	Analog power	(3.3V)
BLUE+	AI	30	Analog input from BLUE channel	
BLUE-	AI	31	Analog input ground from BLUE channel	
ADC_GND	AG	32	ADC ground	
SOG/ADC_TEST	AIO	33	SOG in/ADC test pin	
GREEN+	AI	34	Analog input from GREEN channel	
GREEN-	AI	35	Analog input ground from GREEN channel	
ADCB_VDD	AP	36	Analog power	(3.3V)
RED+	AI	37	Analog input from RED channel	
RED_	AI	38	Analog input ground from RED channel	
ADC_GND	AG	39	Analog ground	
ADC_GND	AG	40	Analog ground	

ADC_VDD	AP	41	Analog power	(3.3V)
AHS	AI	42	Analog HS input	(10), (4), (5)
AVS	AI	43	Analog VS input	(2), (4), (5)

■ **PLL:8 pins**

Name	I/O	Pin No	Description	Note
XO	AI	1	Reference clock output	
XI	AO	2	Reference clock input	
DPLL_GND	AG	3	Ground for digital PLL	
DPLL_VDD	AP	4	Power for digital PLL	(3.3V)
APLL_VDD	AP	5	Power for multi-phase PLL	(3.3V)
PLL_TEST1	AIO	6	Test Pin 1 / IRQ#	3.3V tolerance
PLL_TEST2	AIO	7	Test Pin 2/Power-on-latch for crystal out Frequency	
APLL_GND	AG	8	Ground for multi-phase PLL	

■ **Control Interface: 7 pins**

Name	I/O	Pin No	Description	Note
SDIO [0]	IO	54	Serial control I/F data in/Parallel port data [0]	(2), (3), / 2mA
SDIO [1] / TCON [4] / BBLU [0]	IO	53	Parallel port data [1] / TCON [4] / TTL BBLU [0]	(1), (2), (3), / 2mA
SDIO [2] / TCON [3] / BBLU [1]	IO	52	Parallel port data [1] / TCON [3] / TTL BBLU [1]	(1), (2), (3), / 2mA
SDIO [3] / PWM2 / TCON [2]	IO	51	Parallel port data [1] / TCON [4] / PWM2	(1), (2), (3), / 2mA
SCLK	I	50	Serial control I/F clock	(2), (3), (5)
SCSB	I	111	Serial control I/F chip select	(2), (3), (5)
RESET	O	56	RESET output for Micron	(2), (5), (6) / 2mA

■ **Display & TCON/VIDEO-8 Port: 54 pins**

:LVDS+RSDS+TTLO :RSDS+TTLO :RSDS+TTLIO :TTLO :TTL IO

Pin NO	6-bits Dual RSDS	6-bits Single RSDS	8/6 bits Dual/Single LVDS	8 bits Dual/Single TTL	6 bits Dual TTL	6 bits Single TTL	Note
51	S [3] / TCON [2] / PWM2	S 3] / TCON [2] / PWM2	S [3] / TCON [2] / PWM2	S [3] / TCON [2] / PWM2	S [3] / TCON [2] / PWM2	S [3] / TCON [2] / PWM2	(1), (2), (3), / 2mA
52	S [2] / TCON [3]	S [2] / TCON [3]	S [2] / TCON [3]	S [2] / BBLU [1] / TCON [3]	S [2] / TCON [3]	S [2] / TCON [3]	(1), (2), (3), / 2mA
53	S [1] / TCON [4]	S [1] / TCON [4]	S [1] / TCON [4]	S [1] / BBLU [0] / TCON [4]	S [1] / TCON [4]	S [1] / TCON [4]	(1), (2), (3), / 2mA
55	PWM2 / COUT / TCON [13]	PWM2 / COUT / TCON [13]	PWM2 / COUT / TCON [13]	PWM2 / COUT / TCON [13]	PWM2 / COUT / TCON [13]	PWM2 / COUT / TCON [13]	(1), (2), (3), / 2mA
59	BB3P	BB3P	NC	BBLU [7]	BBLU [7]	BBLU [7]	
60	BB3N	BB3N	NC	BBLU [6]	BBLU [6]	BBLU [6]	
61	BB2P	BB2P	NC	BBLU [5]	BBLU [5]	BBLU [5]	
62	BB2N	BB2N	NC	BBLU [4]	BBLU [4]	BBLU [4]	
63	BB1P	BB1P	NC	BBLU [3] /T0	BBLU [3]	BBLU [3]	
64	BB1N	BB1N	NC	BBLU [2] /T1	BBLU [2]	BBLU [2]	

65	BCLKP	BCLKP	NC	BGRN [1] / T2	TCON [6]	TCON [6]	
66	BCLKN	BCLKN	NC	BGRN [0] / T3	TCON [5]	TCON [5]	
67	BG3P	BG3P	NC	BGRN [7]	BGRN [7]	BGRN [7]	
68	BG3N	BG3N	NC	BGRN [6]	BGRN [6]	BGRN [6]	
73	BG2P	BG2P	TODP	BGRN [5] / T4	BGRN [5]	BGRN [5]	
74	BG2N	BG2N	TODN	BGRN [4] / T5	BGRN [4]	BGRN [4]	
75	BG1P	BG1P	TOCLKP	BGRN [3] / T6	BGRN [3]	BGRN [3]	
76	BG1N	BG1N	TOCLKN	BGRN [2] / T7	BGRN [2]	BGRN [2]	
77	BR3P	BR3P	TOCP	BRED [7] / T8	BRED [7]	BRED [7]	
78	BR3N	BR3N	TOCN	BRED [6] / T9	BRED [6]	BRED [6]	
79	BR2P	BR2P	TOBP	BRED [5] / T10	BRED [5]	BRED [5]	
80	BR2N	BR2N	TOBP	BRED [4] / T11	BRED [4]	BRED [4]	
81	BR1P	BR1P	TOAP	BRED [3] / T12	BRED [3]	BRED [3]	
82	BR1N	BR1N	TOAP	BRED [2] / T13	BRED [2]	BRED [2]	
85	AB3P	NC	TEDP	ABLU [7] / T14	ABLU [7]	ABLU [7]	
86	AB3N	NC	TEDN	ABLU [6] / T15	ABLU [6]	ABLU [6]	
87	AB2P	NC	TECLKP	ABLU [5] / T16	ABLU [5]	ABLU [5]	
88	AB2N	NC	TECLKN	ABLU [4] / T17	ABLU [4]	ABLU [4]	
89	AB1P	NC	TECP	ABLU [3] / T18	ABLU [3]	ABLU [3]	
90	BB1N	NC	TECN	ABLU [2] / T19	ABLU [2]	ABLU [2]	
91	ACLKP	NC	TEBP	ABLU [1] / T20	TCON [1]	TCON [1]	
92	ACLKN	NC	TEBN	ABLU [0] / T21	TCON [0]	TCON [0]	
93	AG3P	NC	TEAP	AGRN [7] / T22	AGRN [7]	AGRN [7]	
94	AG3N	NC	TEAN	AGRN [6] / T23	AGRN [6]	AGRN [6]	
99	AG2P	TCON [11]	NC	AGRN [5] / T24	AGRN [5]	AGRN [5]	
100	AG2N	TCON [10]	NC	AGRN [4] / T25	AGRN [4]	AGRN [4]	
101	AG1P	TCON [9]	NC	AGRN [3] / T26	AGRN [3]	AGRN [3]	
102	AG1N	TCON [8]	NC	AGRN [2] / T27	AGRN [2]	AGRN [2]	
103	AR3P	TCON [7]	NC	ARED [7] / T28	ARED [7]	ARED [7]	
104	AR3N	TCON [6]	NC	ARED [6] / T29	ARED [6]	ARED [6]	

105	AR2P	TCON [5]	NC	ARED [5] / TH	ARED [5]	ARED [5]	
106	AR2N	TCON [1]	NC	ARED [4] / TV	ARED [4]	ARED [4]	
107	AR1P	TCON [0]	NC	ARED [3] / TE	ARED [3]	ARED [3]	
108	AR1N	NC	NC	ARED [2] / TK	ARED [2]	ARED [2]	
113	PWM2 / COUT / TCON [12]	PWM2 / COUT / TCON [12]	PWM2 / COUT / TCON [12]	ARED [1]	COUT	PWM2 / COUT / TCON [12]	(9)
114	TCON [11] /V [0]	V [0]	V [0]	ARED [0]		TCON [11]	(1), (7), (8)
115	TCON [10] /V [1]	V [1]	V [1]	BRED [1]		TCON [10]	(1), (7), (8)
116	TCON [9] / V [2]	V [2]	V [2]	BRED [0]		TCON [9]	(1), (7), (8)
117	TCON [8] / V [3]	V [3]	V [3]	AGRN [1]		TCON [8]	(1), (7), (8)
118	TCON [7] / V [4]	V [4]	V [4]	AGRN [0]		TCON [7]	(1), (7), (8)
119	TCON [6] / V [5]	V [5]	V [5]	DHS	DHS	DHS	(1), (7), (8)
122	TCON [5] / V [6]	V [6]	V [6]	DVS	DVS	DVS	(1), (7), (8)
123	TCON [1] / V [7]	V [7]	V [7]	DENA	DENA	DENA	(1), (7), (8)
124	TCON [0] / VCLK	VCLK	VCLK	DCLK	DCLK	DCLK	(1), (7), (8)

*Single RSDS, even/odd swap, data (59~82) output to pin85~108, TCON (99~108) output to pin59~68.
*In 6-bit dual TTL output mode, Video8 cannot output TCON7~TCON11; while video8 can output TCON in 6-bit single TTL mode.

■ TMDS: 18 pins

Name	I/O	Pin No	Description	Note
TMDS_TST/ PWM1	AIO	9	TMDS_TEST Pin / PWM1 / Power-on-latch for serial / parallel port	
TMDS_GND	G	10		
TMDS_VDD	P	11		(3.3V)
NC	A	12	Impedance Match Reference.	
TMDS_VDD	P	13		(3.3V)
NC	I	14	Differential Data Input	
NC	I	15	Differential Data Input	
TMDS_GND	G	16		
NC	I	17	Differential Data Input	
NC	I	18	Differential Data Input	
TMDS_VDD	P	19		(3.3V)
NC	I	20	Differential Data Input	
NC	I	21	Differential Data Input	
TMDS_GND	G	22		
NC	I	23	Differential Data Input	
NC	I	24	Differential Data Input	
TMDS_GND	G	25		
TMDS_VDD	P	26		(3.3V)

■ PWM Interface: (PWM1, PWM2 can be selected from 1 of 3 possible pins.)

Name	I/O	Pin No	Description	Note
PWM2 / TCON [2] / S [3]	O	51	PWM2 / TCON [2] / SDIO [3]	(1), (2), (3), (5), (8),
PWM2 / TCON [13] / COUT	O	55	PWM2 / TCON [13] / Crystal out	(2), (8), (9)
PWM2 / TCON [12] / COUT	O	113	PWM2 / TCON [12] / Crystal out	(2), (8), (9) 6bit dual TTL cannot support
PWM1 / TMDS_TST	AIO	9	PWM1/ TMDS_TEST Pin/ Power-on-latch for serial / parallel port	(2), (7), (8)
PWM1 / DDCSDA / TCON [1] / BBLU [0]	IO	47	PWM1 / DDC serial control I/F data input / output / TCON [4]	(1), (2), (3), (5), (8),
PWM1 / TCON [7]	IO	125	PWM1 / TCON [7]	(1), (2), (3), (5), (8),
PWM0 / REFCLK	IO	112	PWM0 / (In / out) test pin for DCLK / Video8 even-odd signal	(2), (9)

■ DDC Channel:4 pins

Name	I/O	Pin No	Description	Note
DDCSCL/TCON [0] / BBLU [1]	I	46	DDC serial control I/F clock/TCON [0]/TTL BBLU [1]	(2), (3), (5)
DDCSDA/TCON [1] / PWM1/BBLU [0]	IO	47	DDC serial control I/F data input/ output/ TCON [1]/ PWM1/ TTL BBLU [0]	(1), (2), (3), (5), (6), (8)/8mA/no slew
TCON [5]	I	126	TCON [5]	(2), (3), (5)
TCON [7]/PWM1	IO	125	TCON [7]/ PWM1	(1), (2), (3), (5), (6), (8)/8mA/no slew

■ Power & Ground:22 pins

Name	I/O	Pin No	Description
3.3V Power	P	49,121	VCCIO: 2
3.3V Ground	G	48,120	GNDIO: 2
3.3V Power	P	58,71,83, 95,110	PVCC: 5
3.3V Ground	G	57,72,84,96,109	PGND: 5
2.5V Power	P	45,69,98,127	VCCK: 4
2.5V Ground	G	44,70,97,128	GNDK: 4

Note: (1) TTL compatible CMOS Input (Vt=1.7V); VCC=3.3V;
(2) 5V tolerance pad;
(3) Internal 75K Ohms pull high resistor.
(4) Internal 75K Ohms pull low resistor.
(5) Schmitt trigger CMOS Input (Vt=1.4~2.2V);
(6) Open-Drain, Output Drive low & Pull-high.
(7) Bi-directional input/output
(8) Programmable driving current (2~10mA)
(9) TTL output 5V & 3.3V
(10) 4V tolerance pad

C. MTV312M64

The MTV312M micro-controller is an 8051 CPU core embedded device especially tailored for CRT/LCD Monitor applications. It includes an 8051 CPU core, 1024-byte SRAM, 14 built-in PWM DACs, VESA DDC interface, 4-channel A/D converter, and a 64K-byte internal program Flash-ROM.
A "CMOS output pin" means it can sink and drive at least 4mA current. It is not recommended to use such pin as input function.
A "open drain pin" means it can sink at least 4mA current but only drive 10~20uA to VDD. It can be used as input or output function and needs an external pull up resistor.
A "8051 standard pin" is a pseudo open drain pin. It can sink at least 4mA current when output is at low level, and drives at least 4mA current for 160nS when output transits from low to high, then keeps driving at 100uA to maintain the pin at high level. It can be used as input or output function. It needs an external pull up resistor when driving heavy load device.

POWER CONFIGURATION

The MTV312M can work on 5V or 3.3V power supply system.
In 5V power system, the VDD pin is connected to 5V power and the VDD3 needs an external capacitor, all output pins can swing from 0~5V, input pins can accept 0~5V input range.
And ADC conversion range is 5V. However, X1 and X2 pins must be kept below 3.3V.
In 3.3V power system, the VDD and VDD3 are connected to 3.3V power, all output pins swing from 0~3.3V, HSYNC, VSYNC and open drain pin can accept 0~5V input range, other pins must be kept below 3.3V. And the ADC conversion range is 3.3V.

D. INVERTER

In order to drive the CCFLs embedded in the panel module, there is a push-pull inverter to convert by the controller. from input 12V up to hundreds of AC voltage output peak to peak.
The inverter is formed by symmetric in order to drive the separate lamp modules.
The input stage consists of a PWM controller, push-pull inverter, and switching MOSFET to convert DC input into AC output.
The output stage consists of a tuning capacitor, transformer, and push-pull MOSFET pair to boost AC output up to hundreds of voltage peak to peak.
And one resister is serial to lamp for output voltage feedback.
There are two signals which control the inverter come from system to turn on the inverter and control brightness.
Logic "low" level which send to I901 is turn on the inverter.
BRI signal control brightness by DC level which was integral from PWM signal.

5. Adjusting Procedure (VE510s-4/VE510b-4)

5.1. ADJUSTMENT CONDITIONS AND PRECAUTIONS

1. Approximately 30 minutes should be allowed for warm up before proceeding.
2. Adjustments should be undertaken only on those necessary elements since most of them have been carefully preset at the factory.
3. ESD protection is needed before adjustment.

5.2. MAIN ADJUSTMENTS

NO.	FUNCTION	DESIGNATION
1.	Eeprom Initial	Function Key
2.	White Balance	Function Key

5.3. ALIGNMENT PROCEDURES

Adjustment Conditions and Precautions:

(A). Power supply voltage:
AC 110/120V±10% 60 Hz±5%, AC 220/240V±10% 50 Hz±5%.

(B). Warm up time:
The display must be power ON for at least 30 minutes at full white pattern before starting alignments.
This is especially critical in color temperature and white balance adjustments.

(C). Signals: reference the front detail specifications and timing table.
Video : reference the front detail specifications.

1. Adjustment of V-com Voltage:

A. Timing : 1024x768@60Hz. 48KHz
B. Pattern : The picture of " Shut down windows" or Full screen pixel ON/OFF pattern.

2. Eeprom Initial:

A. Timing : 1024x768@60Hz.
B. Pattern : Cross hatch.
C. Switch off the power and press the "▲" and " 2 " key simultaneously, then switch on the power. At this time we can enter into the factory mode when press the " 1 "key.
D. Select the "EEPROM INIT" item and press " 2 "key to reset the Eeprom.

3. White Balance Adjustment :

A. Timing : 1024x768@60Hz.
B. Pattern : 16Gray Level. or 5-MOSAIC (Pattern 42)
C. Set CA210 color analizer at the center of screen and along a perpendicular to the screen at 0cm from the display.
D. Move "▼" key to select the " WHITE BALANCE" item in the factory mode and press " 2 "key, then the white balance will be auto dadjusted.
E. Color temperature verification: (Set Brightness and Contrast to Maximum)
6500K verify : press "▼" ,"▲" key to move cursor to 6500K at factory mode and press " 2 " key, and then check the color temperature is
x=0.313 ±0.02
y=0.329 ±0.02
Y≥200 cd/m^2

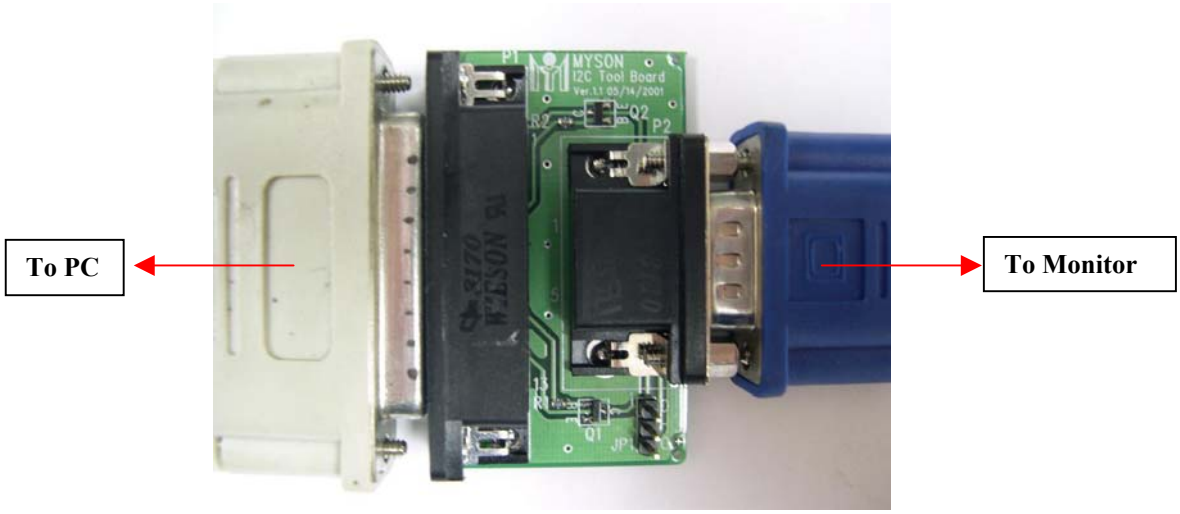
5.4. Firmware update procedure : (VE510s-4/VE510b-4)

When you received a received monitor , please check whether the firmware version. If not , please followning procedures to upgrade to the latest version .

1. Equipment needed :

- VE510s-4/VE510b-4
- PC (Personal computer)
- LPT cable
- Fixture (LM5ISP)
- Firmware upgrade program

2. Connection :



Appendix A : How to install the software for ISP :

1. To setup ISP Environment :
   Hardware: PC or notebook, parallel(printer) cable, ISP tooling.
   Software: If OS was win2000 or WinXP , please install "PORT95NT.exe"
   In order to ensure can execute ISP program, please set BIOS in PC or Notebook as Fig 0.0

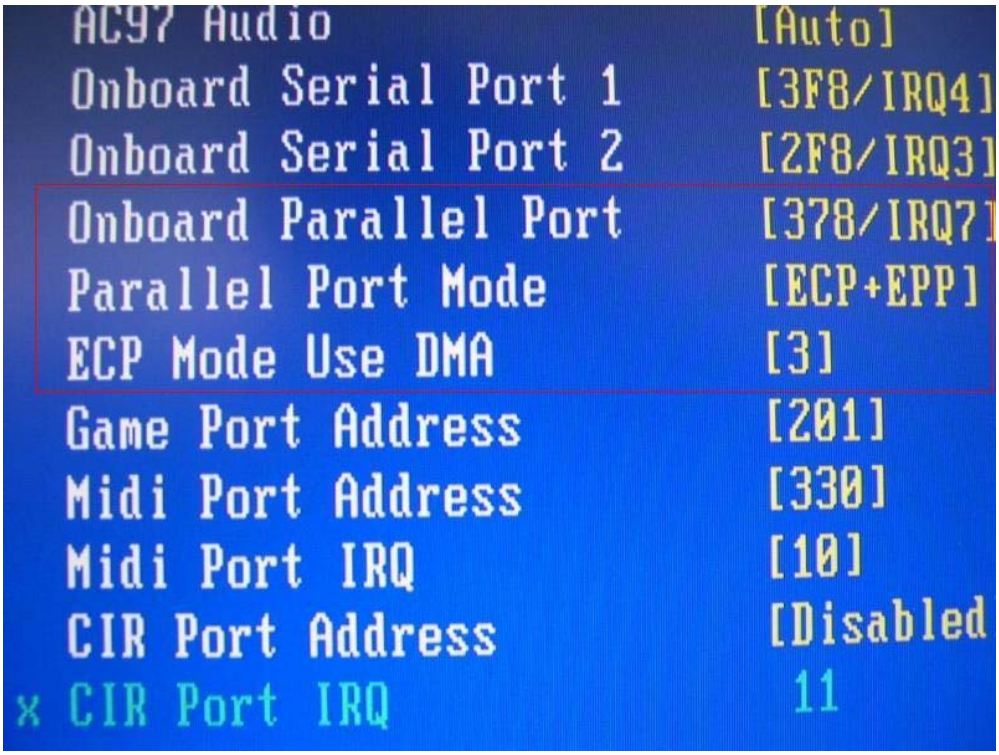

AC97 Audio [Auto]
Onboard Serial Port 1 [3F8/IRQ4]
Onboard Serial Port 2 [2F8/IRQ3]
Onboard Parallel Port [378/IRQ7]
Parallel Port Mode [ECP+EPP]
ECP Mode Use DMA [3]
Game Port Address [201]
Midi Port Address [330]
Midi Port IRQ [10]
CIR Port Address [Disabled
x CIR Port IRQ 11

Fig 0.0

2. Double-click the " PORT95NT.exe" in Windows & initall the program. , see Fig 0.1

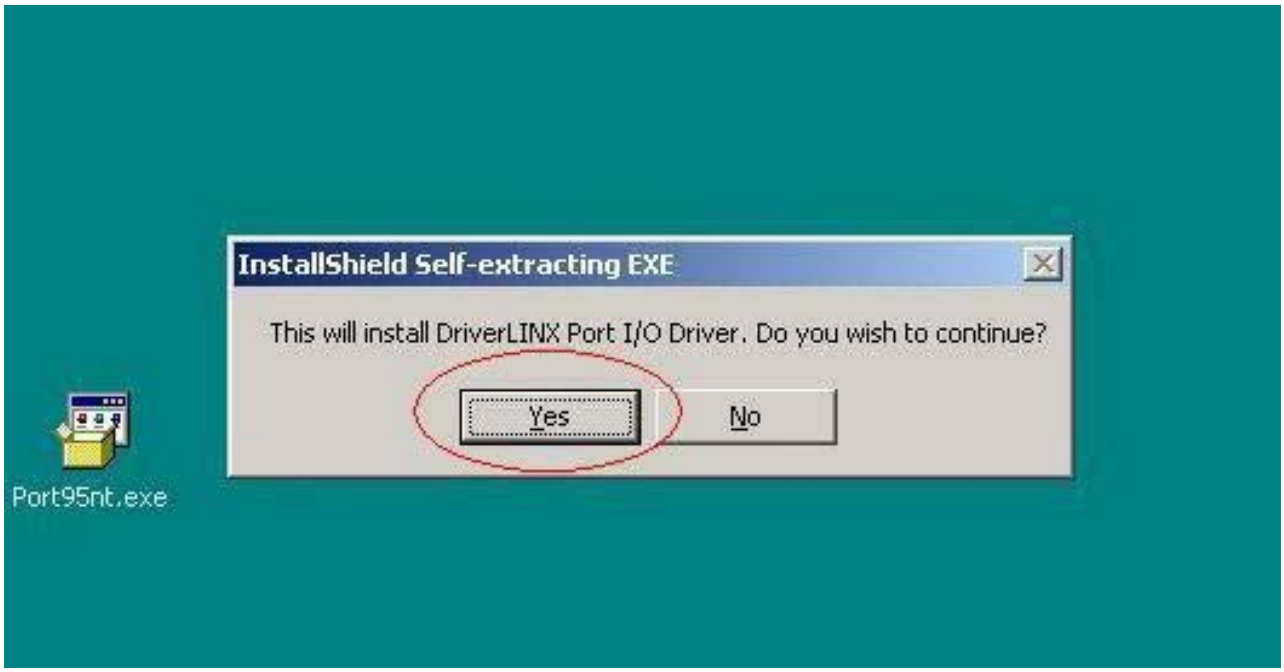


Fig 0.1

3. Keep on press " Next " 4 times to go through the installation processes, see Fig. 0.2

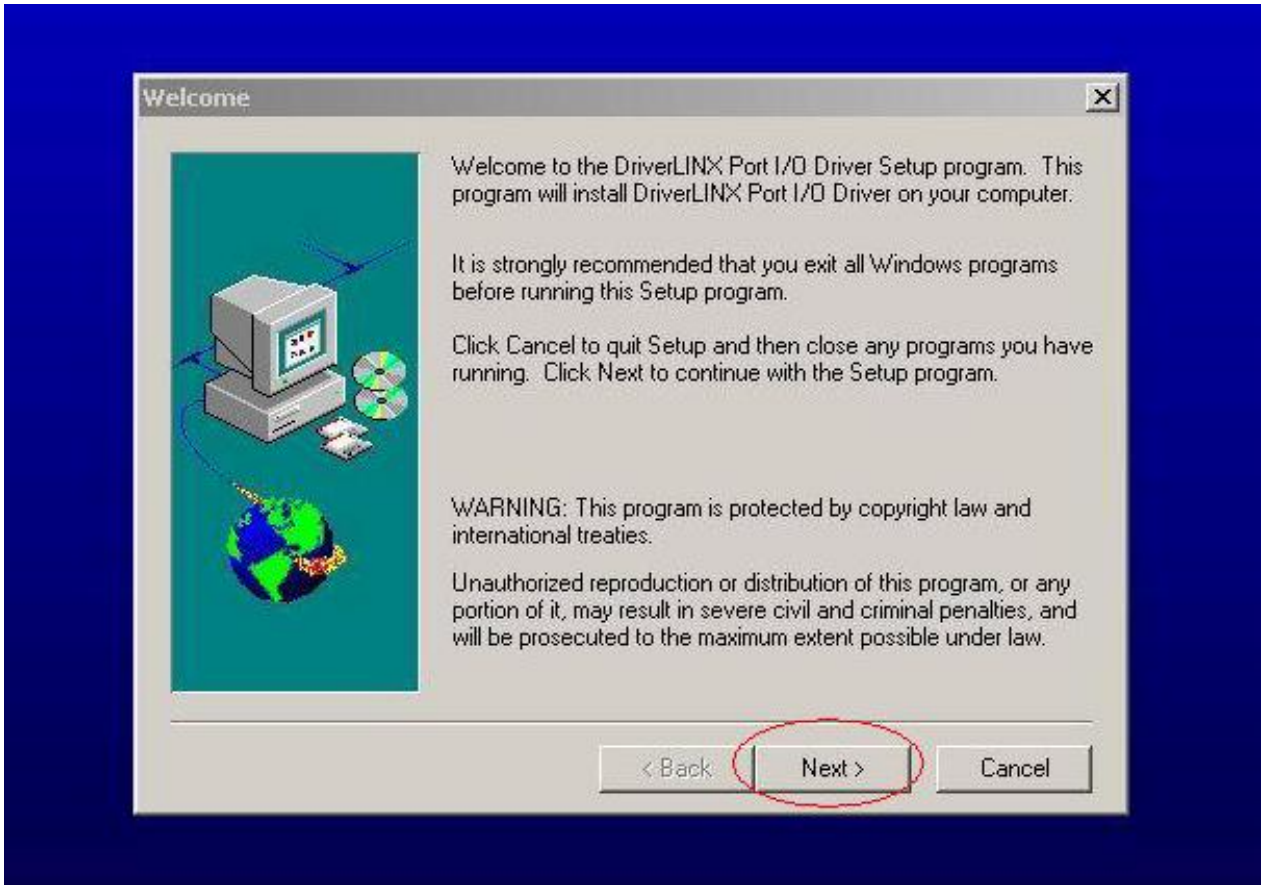

Welcome
Welcome to the DriverLINX Port I/O Driver Setup program. This program will install DriverLINX Port I/O Driver on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
< Back
Next >
Cancel

Fig. 0.2

4. Choose " Typical " then press " Next " , see Fig. 0.3

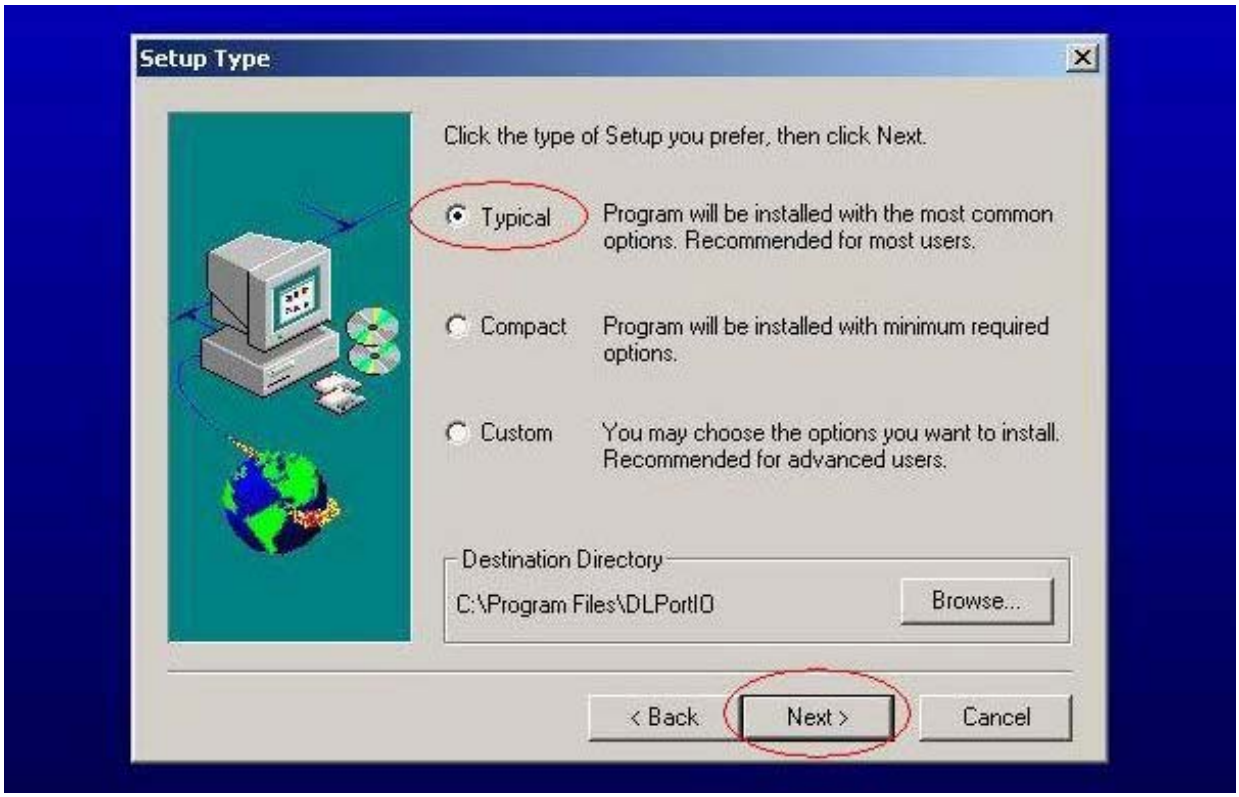

Setup Type
Click the type of Setup you prefer, then click Next.
Typical
Program will be installed with the most common options. Recommended for most users.
Compact
Program will be installed with minimum required options.
Custom
You may choose the options you want to install. Recommended for advanced users.
Destination Directory
C:\Program Files\DLPortIO
Browse...
< Back
Next >
Cancel

Fig. 0.3

5. Keep on press " Next " 4 times to go through the installation processes, see Fig. 0.4

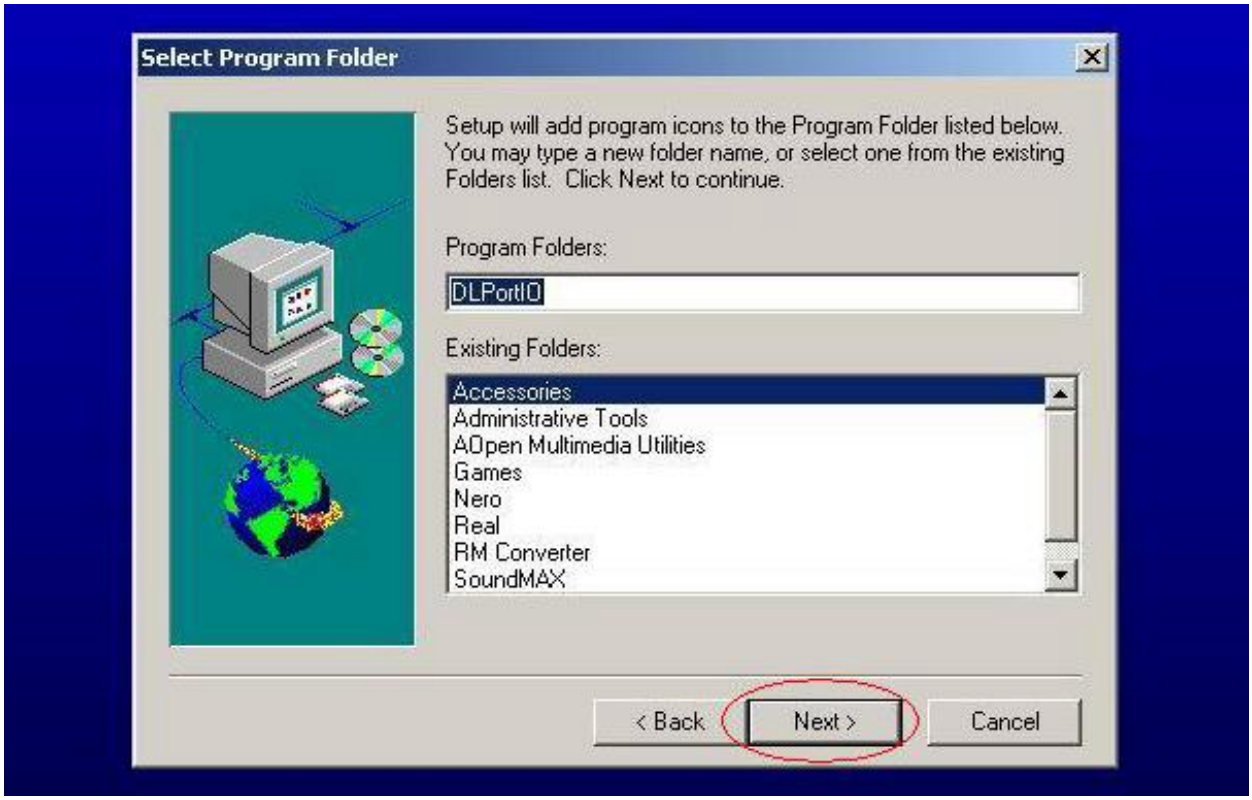


Fig. 0.4

6.Install completed , restart the PC or notebook. See Fig 0.5

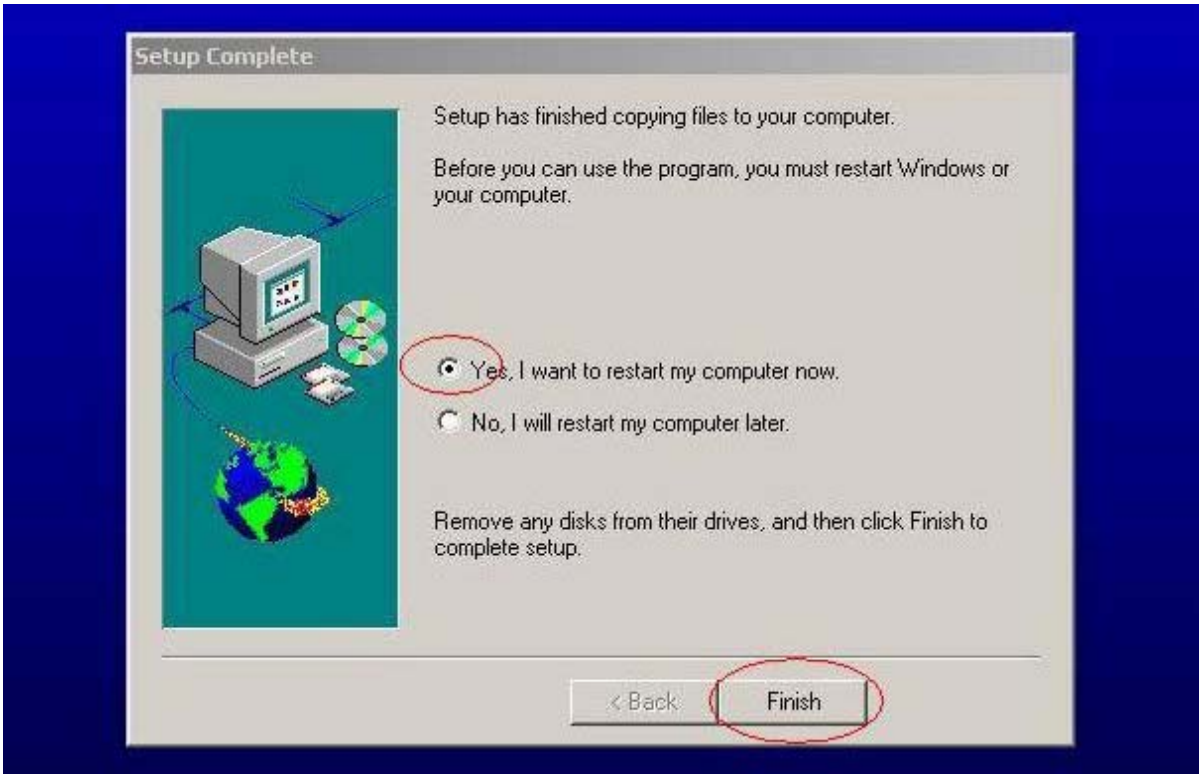

Setup Complete
Setup has finished copying files to your computer.
Before you can use the program, you must restart Windows or your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish

Fig. 0.5

Install ISP

1. User could download ISP driver and PORT95NT install from Myson Century website (www.myson.com.tw)
2. After extracting the ZIP file , the total files list as Fig 1.0 , and double click the file of setup.exe to install.

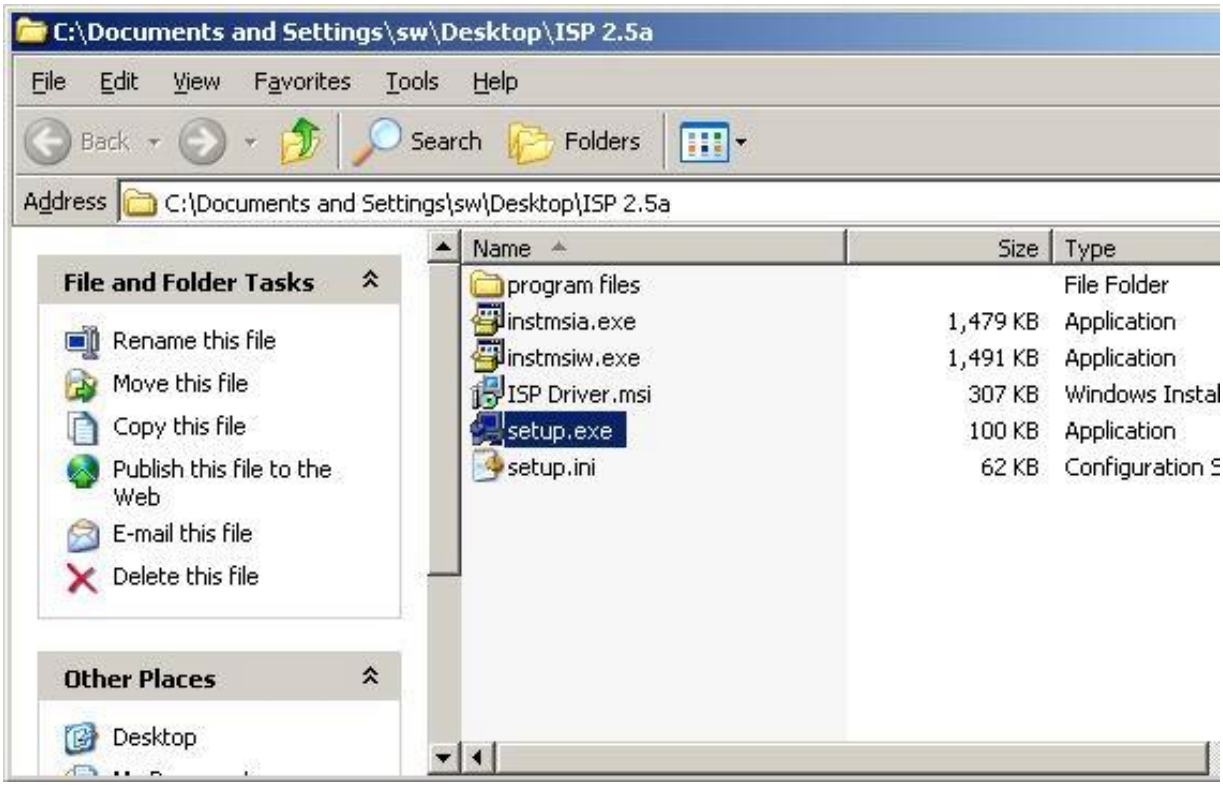


Fig 1.0

3. Press " Next " button to continue., see Fig 1.1

ISP Driver - InstallShield Wizard
Welcome to the InstallShield Wizard for ISP Driver
The InstallShield(R) Wizard will install ISP Driver on your computer. To continue, click Next.
WARNING: This program is protected by copyright law and international treaties.
< Back
Next >
Cancel

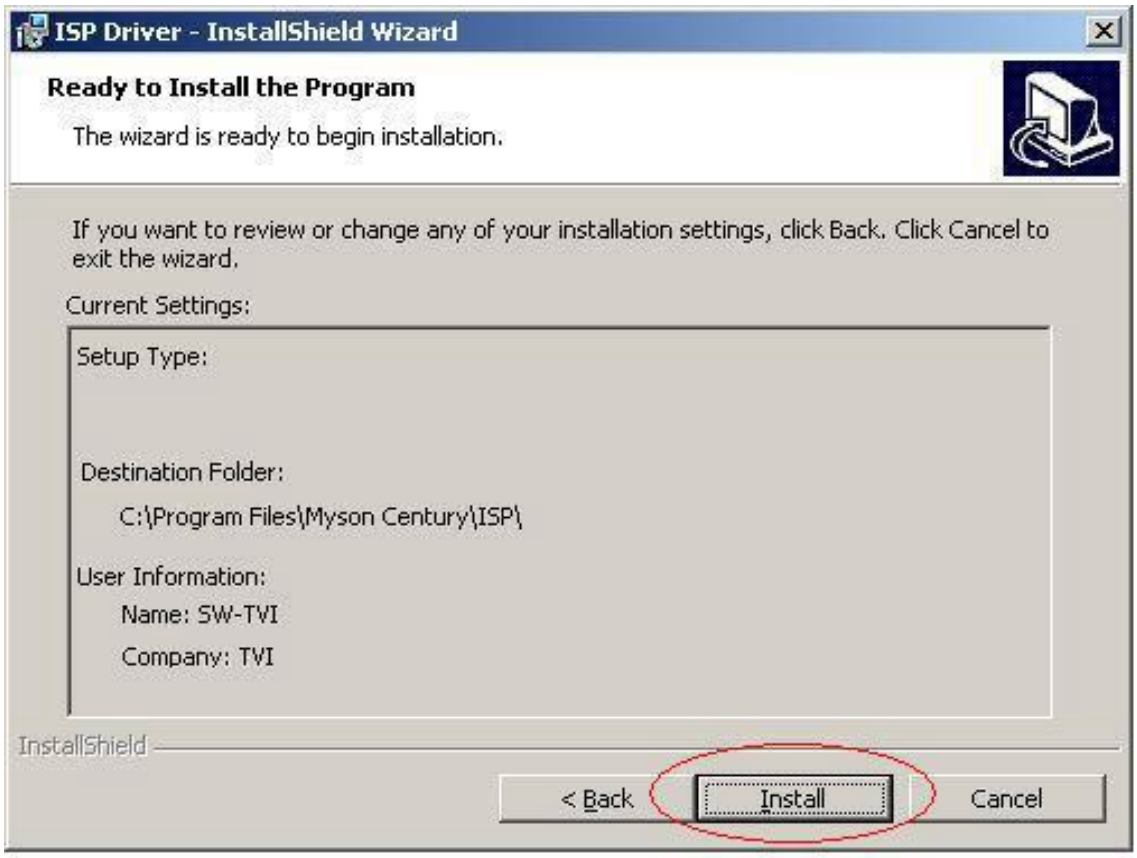
Fig 1.1

4. Keep default setting or press " Change " button for selecting the path that you want , and then press " Next " button to continue , see Fig 1.2

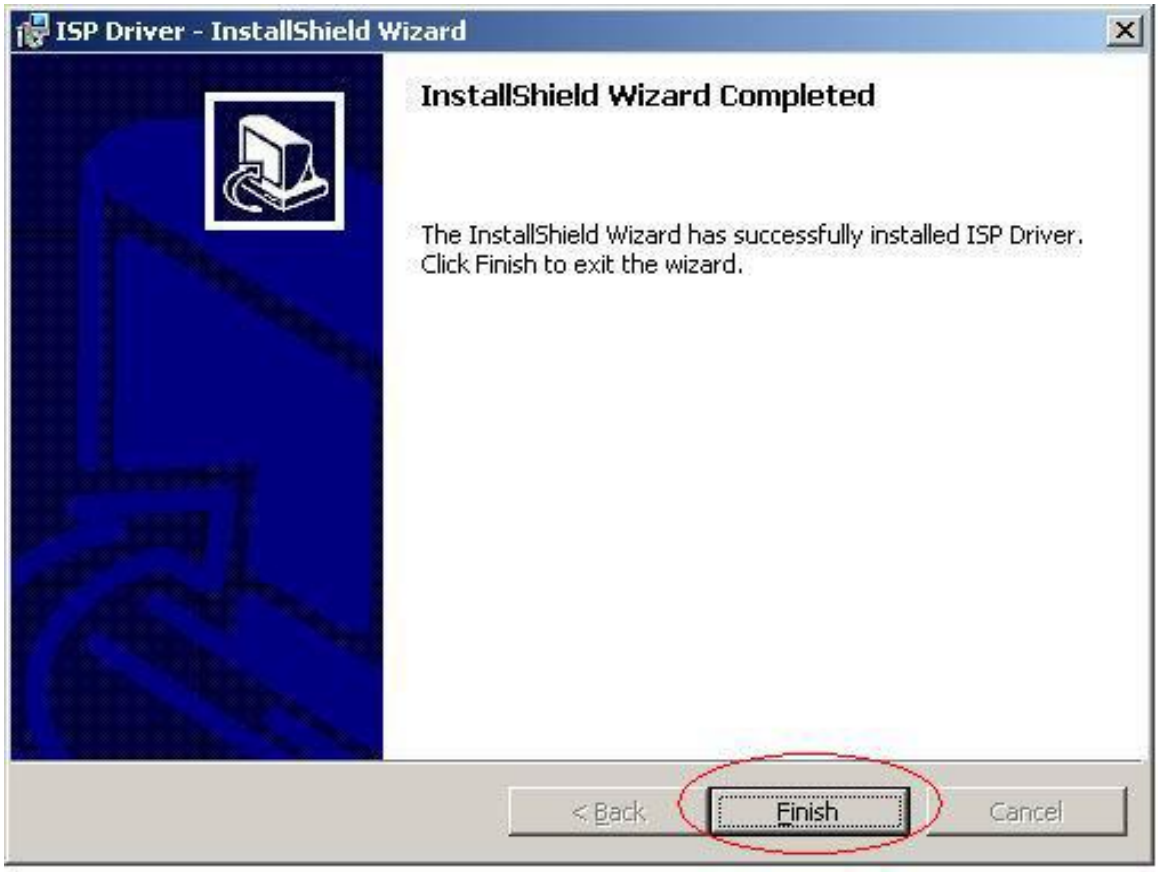
ISP Driver - InstallShield Wizard
Destination Folder
Click Next to install to this folder, or click Change to install to a different folder.
Install ISP Driver to:
C:\Program Files\Myson Century\ISP\
Change...
InstallShield
< Back
Next >
Cancel

Fig 1.2

5. Press " Install " button to continue , see Fig 1.3



6. Installation has finished , press " Finish " button , see Fig 1.4


ISP Driver - InstallShield Wizard
InstallShield Wizard Completed
The InstallShield Wizard has successfully installed ISP Driver. Click Finish to exit the wizard.
< Back
Finish
Cancel

1. After installation , we could find the shortcut in the setting paah or the program bar (default setting) , see Fig 2.1

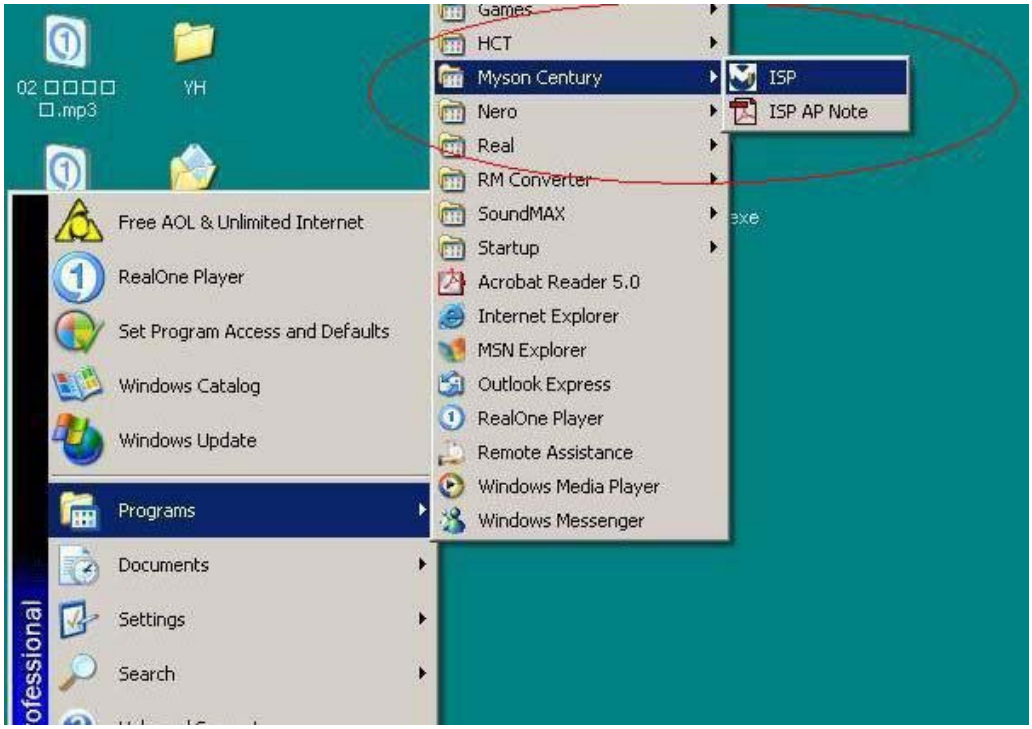


Fig. 2.1

2. Security file is a key to use ISP function , press " OK " button , see Fig 2.2

Fig. 2.2

3. The warning is used to remind user of that different CPU rate may cause ISP function fail. (it's limited by IIC protocol) , Press " OK " button , see Fig 2.3

Fig. 2.3

4. Press " Create Security file " button to key in Security code . Adjusting bar to decrease speed of IIC bus ,
See Fig.2.4 .

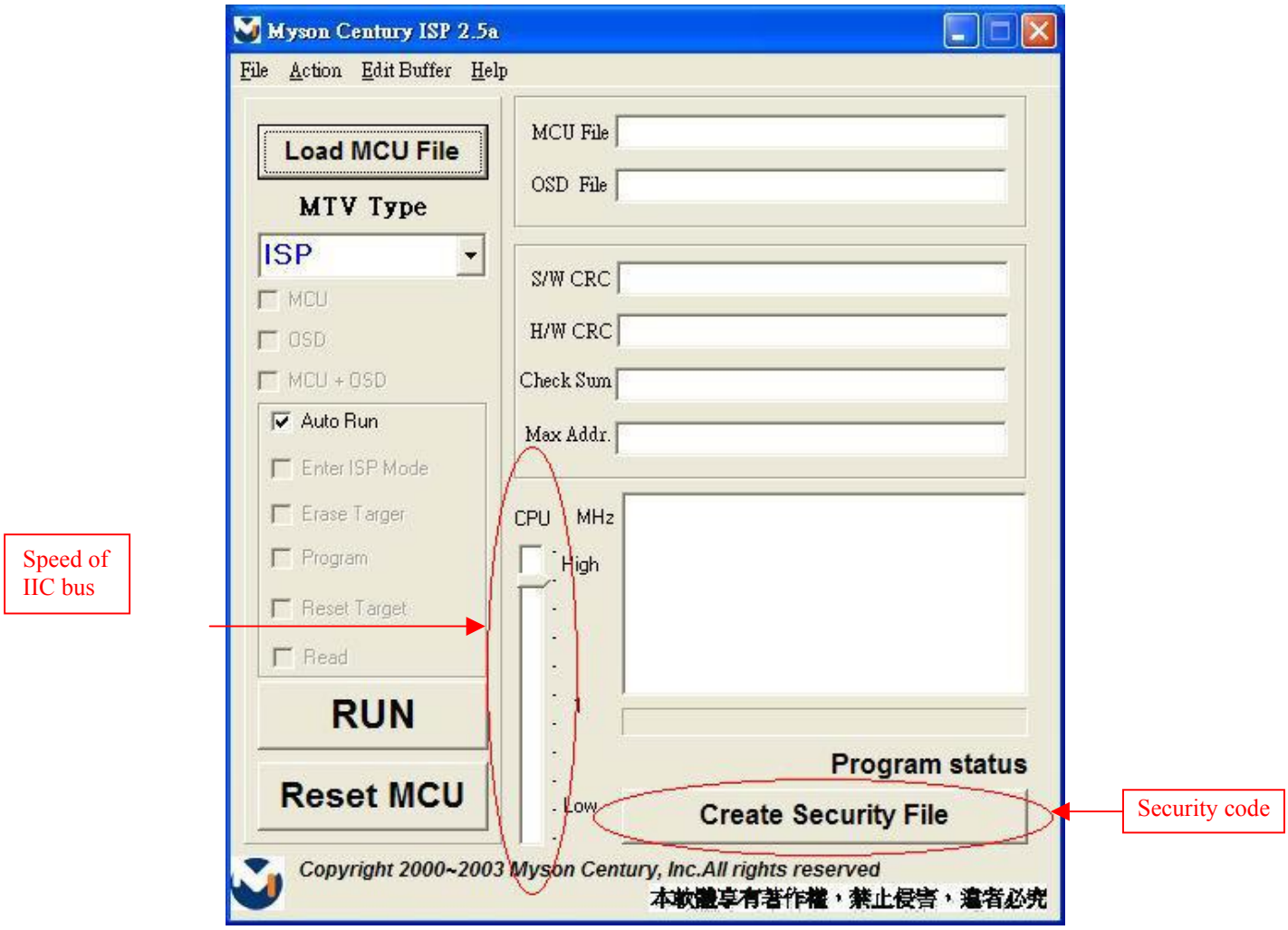


Fig. 2.4

5. Fig 2.5 shows the setting for security code of software ISP . it needs 2 command No. and key in command sequentially for 7C , 4C , 77. The command No. and command must be set by user while coding. About the detailed of setting , please refer to section 6 boot code of ISP .

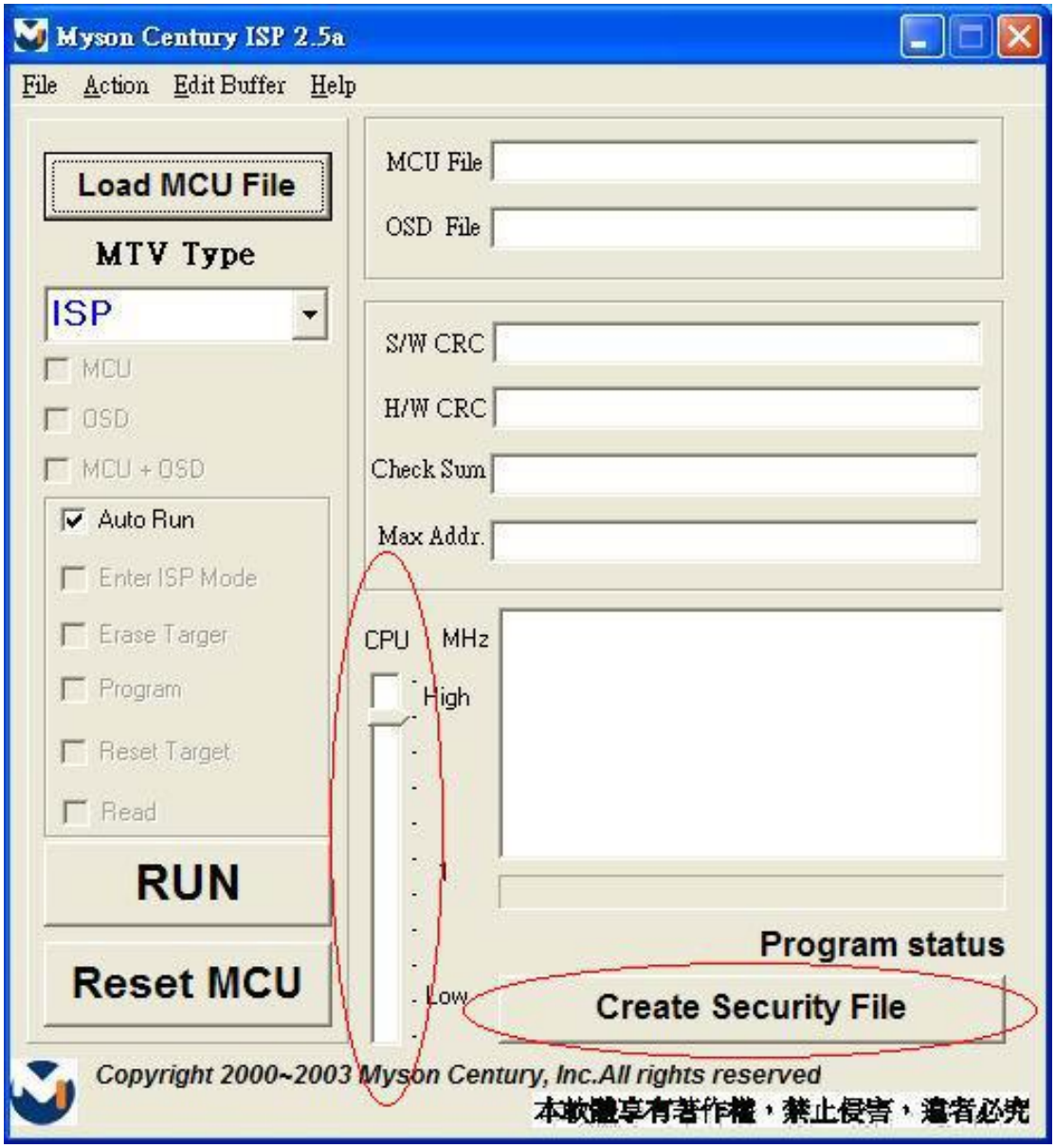


Fig. 2.5

Appendix C : Use ISP to program MCU

1. Select MTV type first , load the binary or intel hex file that you want to program into the MCU , and select " AUTO" item , then press " RUN " button , see fig3.1

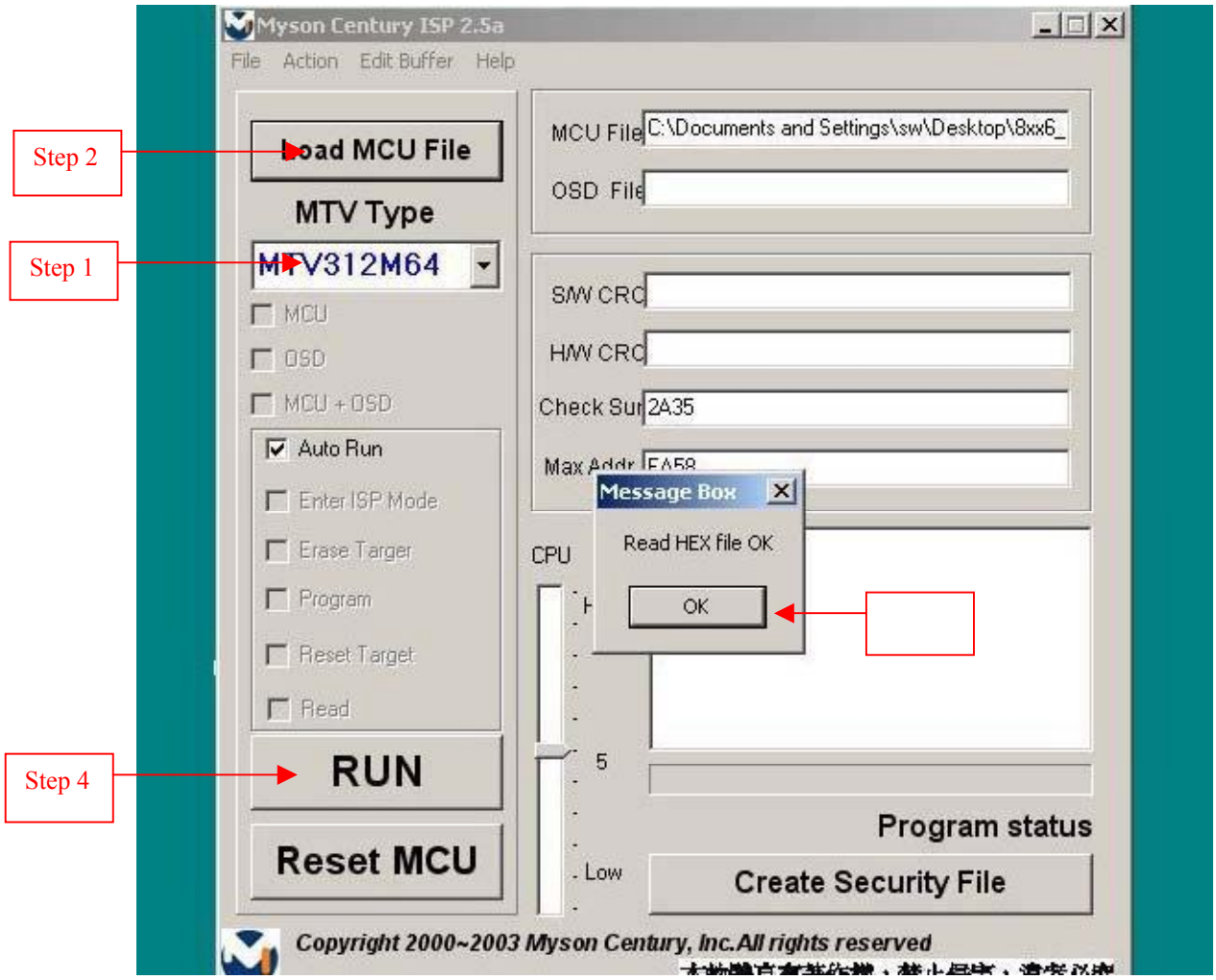


Fig. 3.1

2. If user change the MTV type , it must load file again , or the buffer of load file will be cleared .
3. CRC (cyclic redundancy check) : the host can check CRC register's result instead of reading every byte in flash .

The message of **Check MCU CRC OK** means that the host verify OK for the progress of program , see Fig.3.2

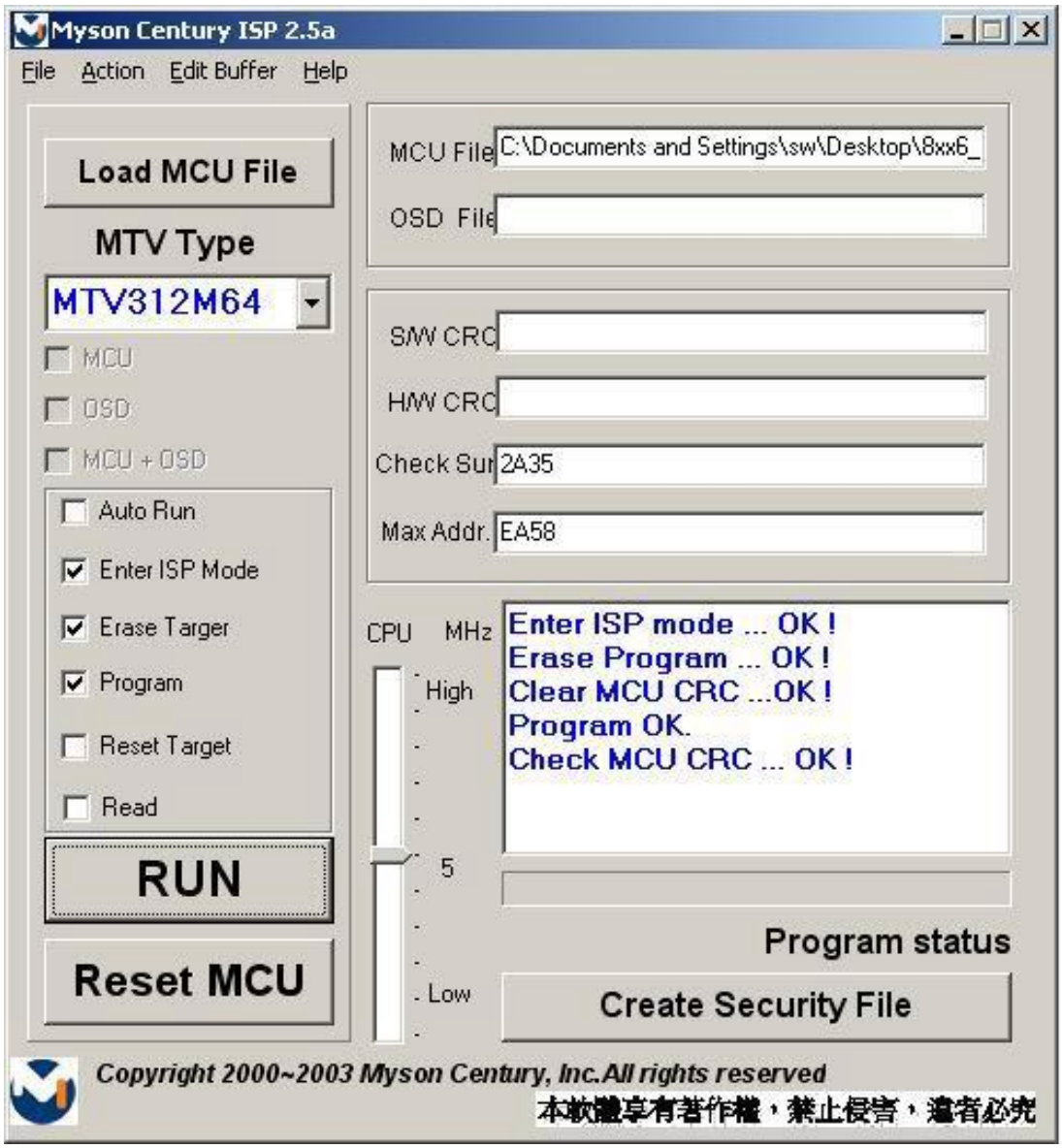


Fig. 3.2

Packing For Shipping

1. Packing Procedure

1.1 Paste protection film to protect the monitor. (Figure 1)

1.2 Put the monitor in the PE bag and seal the bag with tape. (Figure 2)

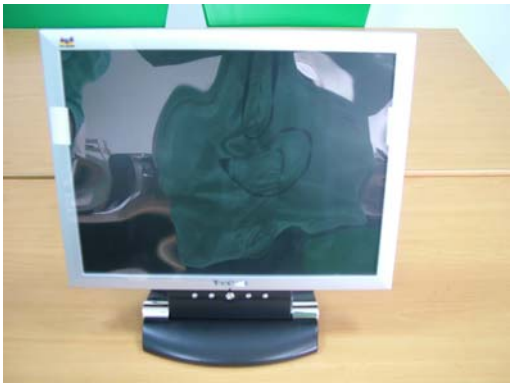


Figure 1

Figure 2

1.3 Put the cushions on the monitor. (Figure 3)

1.4 Place the monitor into the carton and then put all the accessories into the carton. At last, close the carton and seal it with tape. (Figure 4)

Figure 3

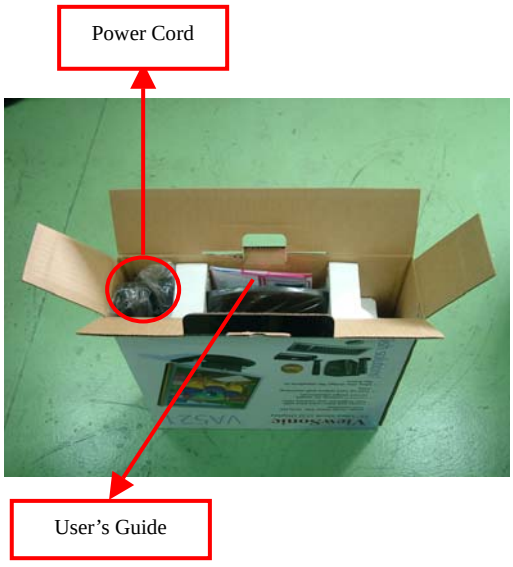
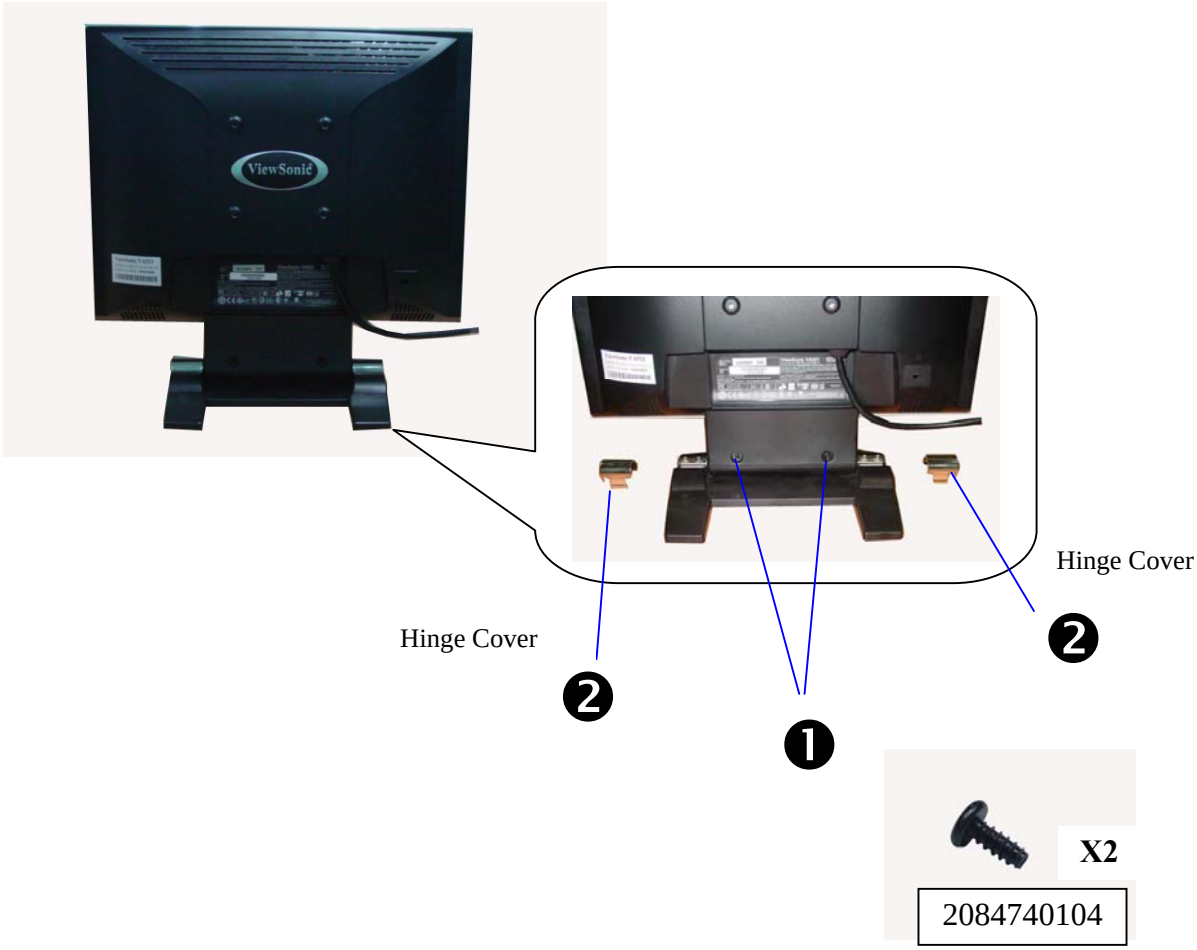


Figure 4

Disassembly Procedure

1. Disassembly of Front Cover

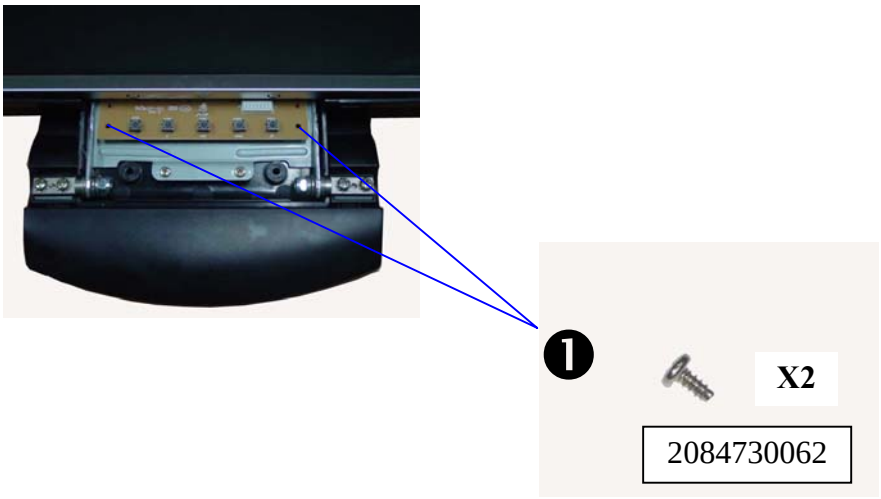


1. Unscrew two screws of Rear Cover.
2. Remove two Hinge Cover.

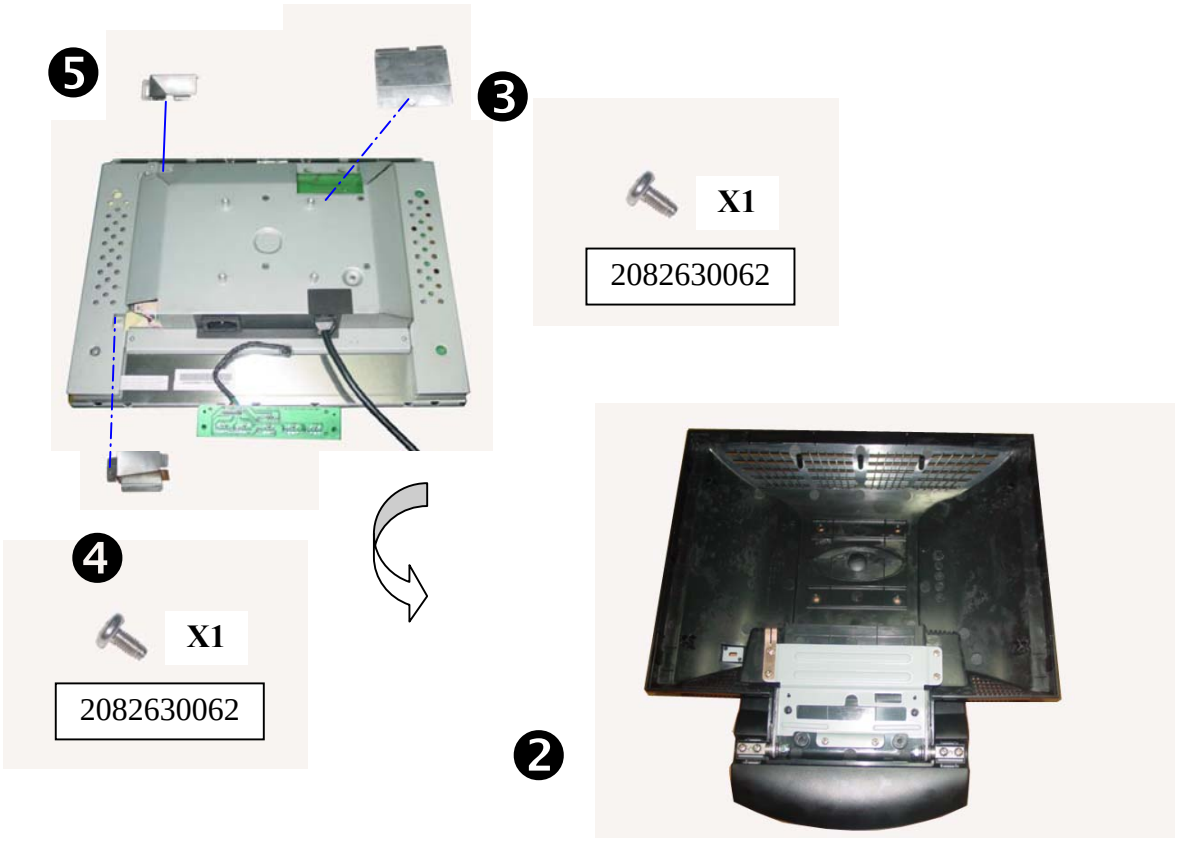
Front Cover ❸

3. Remove Front Cover from Monitor.

2. Disassembly of Rear Cover, Keypad Board and LCD Panel

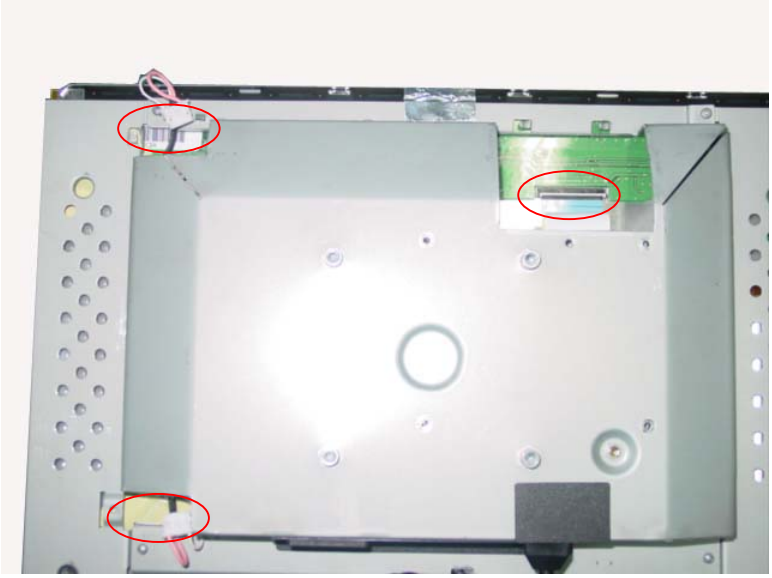


1. Unscrew two screws that secure Keypad Board.

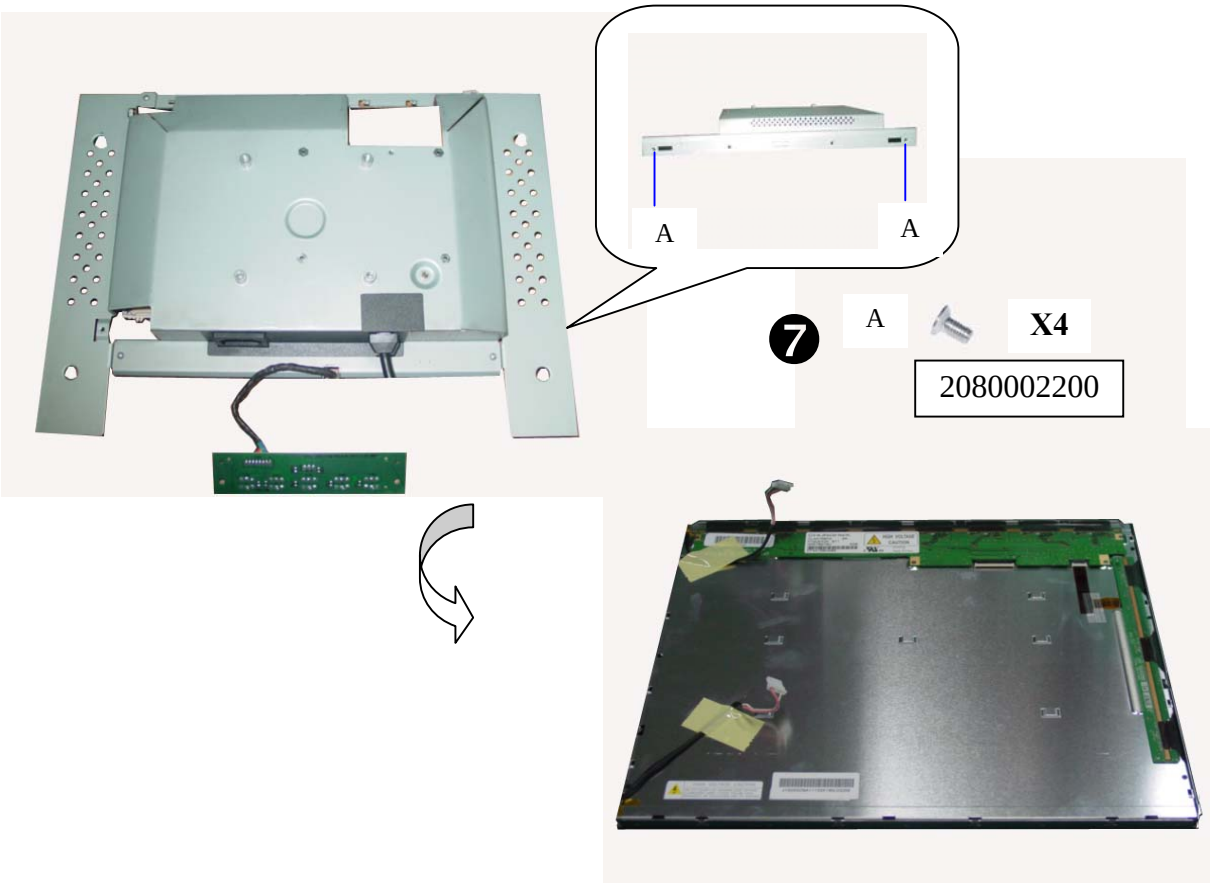


2. Detach Rear Cover and LCD Panel module from the monitor.
3. Unscrew one screw that secure M/B Shielding Plate.
4. Unscrew one screw that secure Inverter down Shielding Plate.
5. Remove Inverter top Shielding Plate.

❻

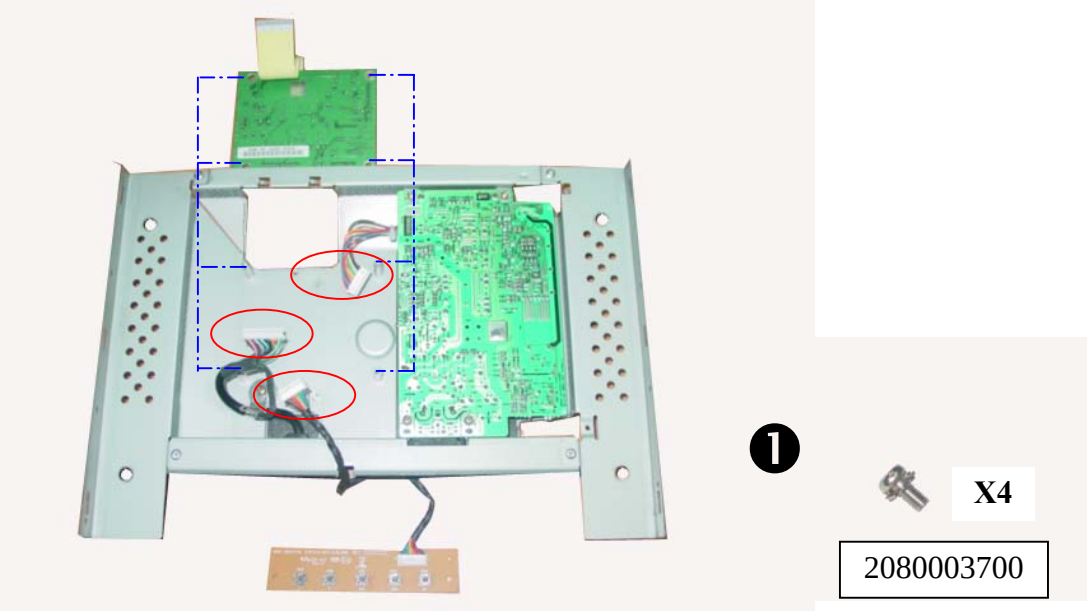


6. Disconnect three connectors to remove Inverter connector and LCD Panel FFC cable.

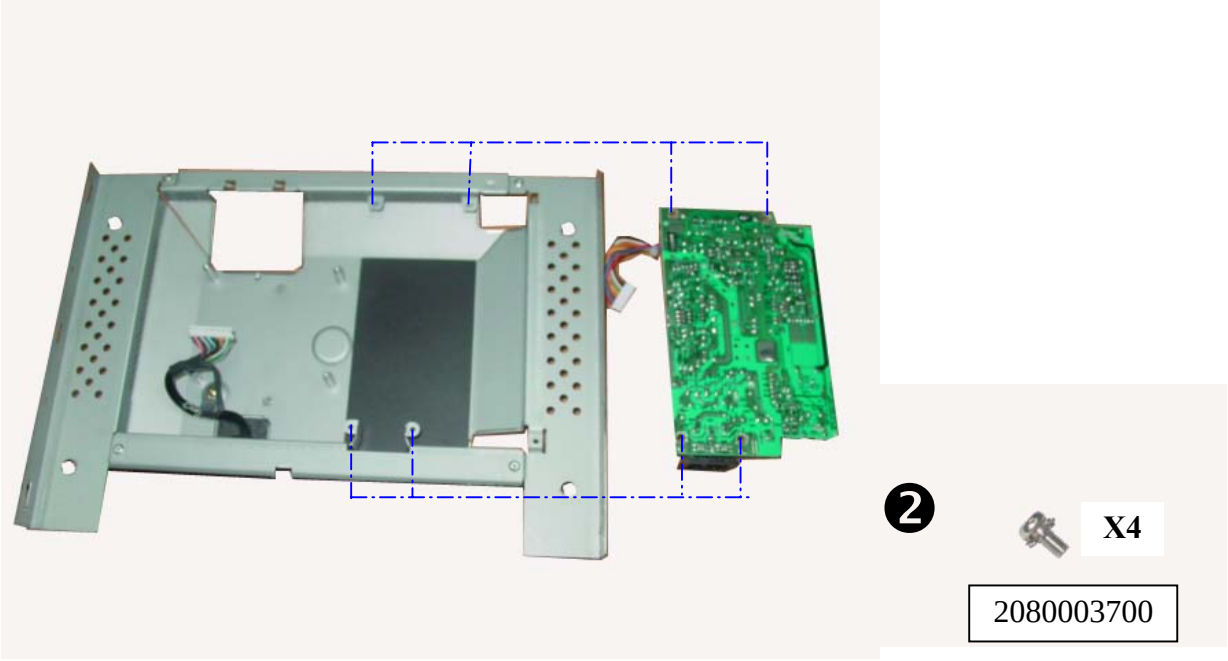


7. Unscrew four screws that secure Metal Fitting and remove LCD Panel from Metal Fitting.

3. Disassembly of Main Board, Keypad Board and Power Board



1. Unscrew four screws that secure Main Board and disconnect the wires which are connected to Main Board and remove Main Board.



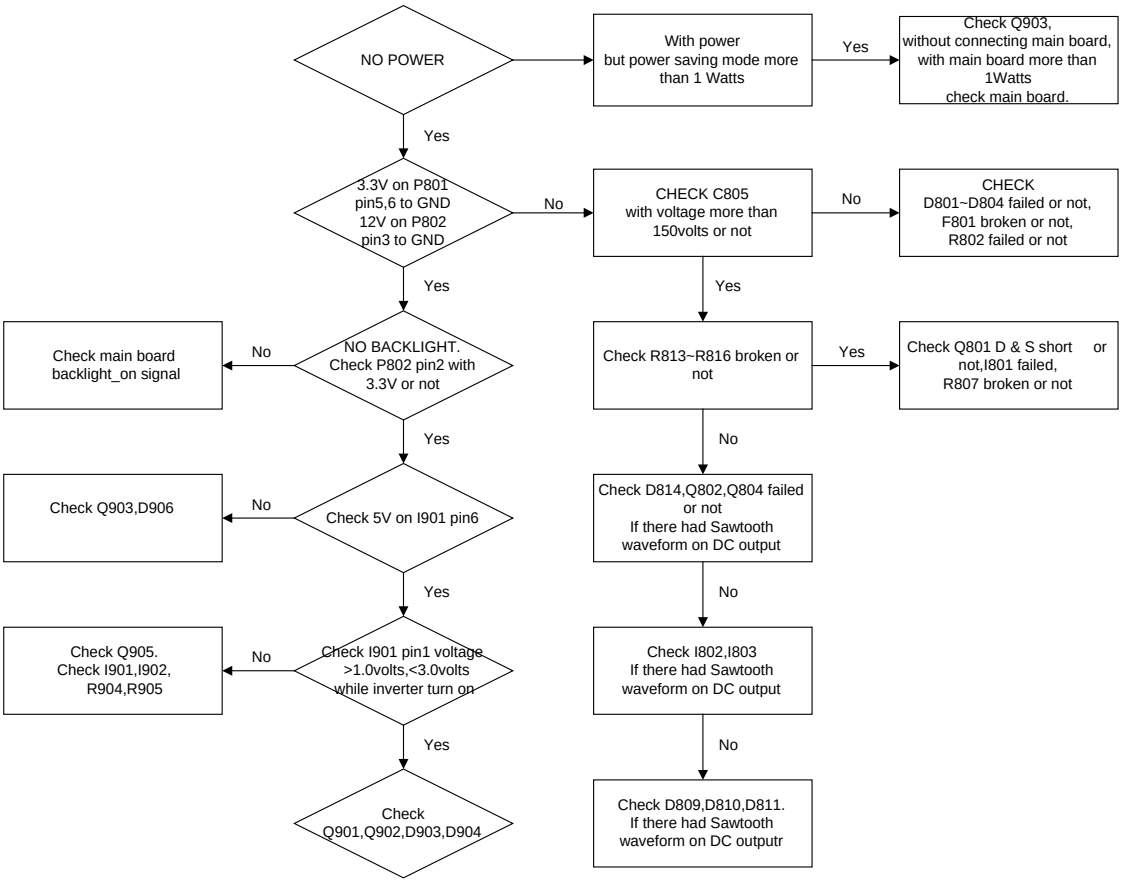
2. Unscrew four screws that secure Power Board to remove Power Board.

4. Disassembly of Stand unit from Rear Cover

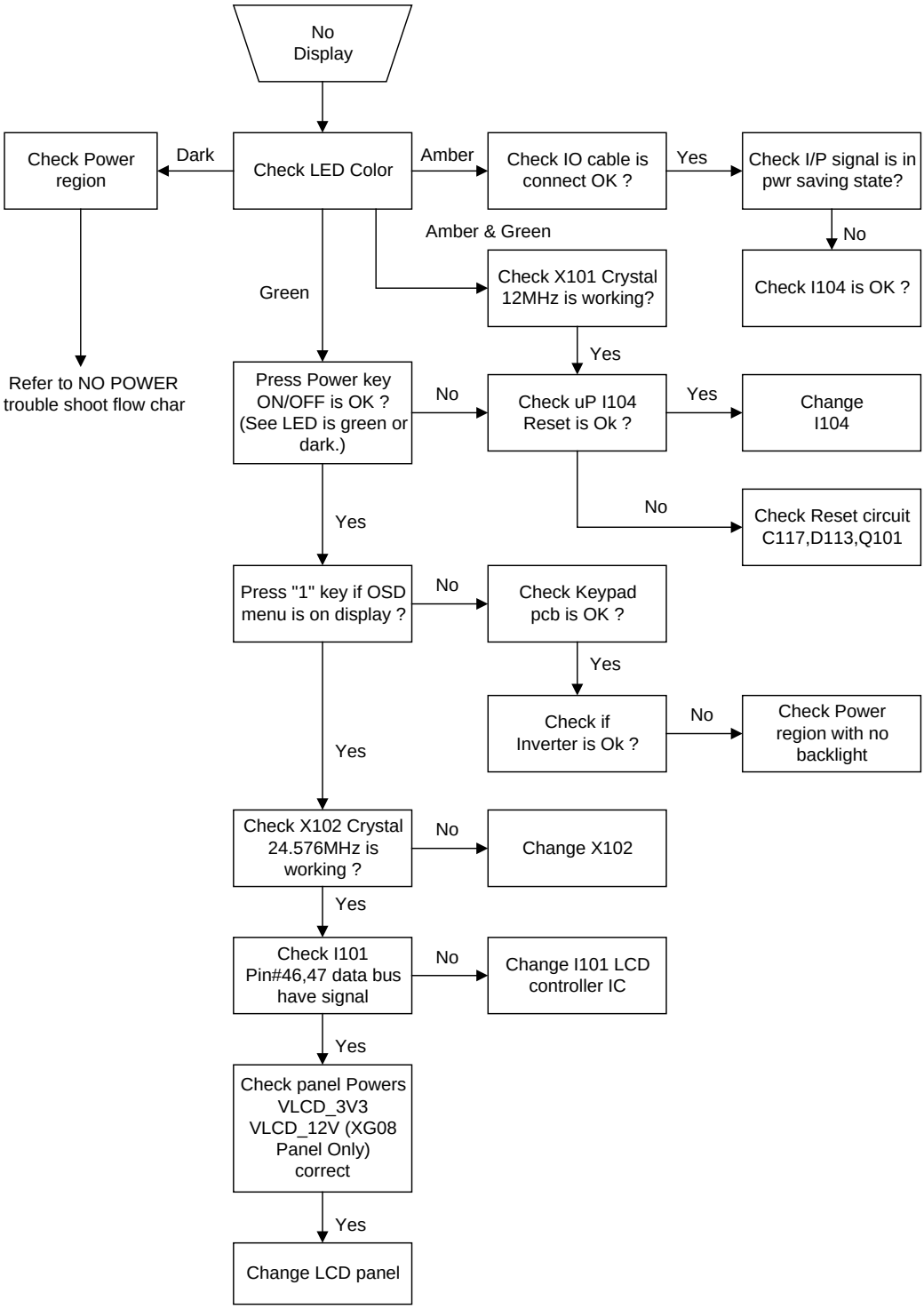
1. Unscrew six screws that secure Stand unit and detach Stand unit from the monitor.

6. Trouble Shooting Flow Chart (VE510s-4/VE510b-4)

6.1 NO POWER or BACKLIGHT


NO POWER
With power but power saving mode more than 1 Watts
Yes
Check Q903, without connecting main board, with main board more than 1Watts check main board.
Yes
3.3V on P801 pin5,6 to GND 12V on P802 pin3 to GND
No
CHECK C805 with voltage more than 150volts or not
No
CHECK D801~D804 failed or not, F801 broken or not, R802 failed or not
Yes
Yes
Check main board backlight_on signal
No
NO BACKLIGHT. Check P802 pin2 with 3.3V or not
Check R813~R816 broken or not
Yes
Check Q801 D & S short or not,I801 failed, R807 broken or not
Yes
No
Check Q903,D906
No
Check 5V on I901 pin6
Check D814,Q802,Q804 failed or not If there had Sawtooth waveform on DC output
Yes
No
Check Q905. Check I901,I902, R904,R905
No
Check I901 pin1 voltage >1.0volts,<3.0volts while inverter turn on
Check I802,I803 If there had Sawtooth waveform on DC output
Yes
No
Check Q901,Q902,D903,D904
Check D809,D810,D811. If there had Sawtooth waveform on DC outputr

6.2 NO DISPLAY



7. Recommended Spare Parts List

RECOMMENDED SPARE PARTS LIST (VE510s-4)

ViewSonic Model Number: VLCDS27996-2W
Rev: 1b
Serial No Prefix: PUK

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal Number#	Panel Sources	
								Hanstarr (16ms)	CPT (16ms)
1	Board Assembly:	PCB ASS'Y BLOCK (CON)		B-CB-0206-0177	6202-7956908101			1	1
2		PCB ASS'Y BLOCK (MAIN)		B-00003888	6201-7956908241			1	
3		PCB ASS'Y BLOCK (MAIN)		B-00004512	6201-7956908271				1
4		PCB ASS'Y BLOCK (POWER)		B-00003883	6204-7956908141			1	
5		PCB ASS'Y BLOCK (POWER)		B-00004507	6204-7956908171				1
6	Cabinets:	BEZEL ASS'Y ABS 94HB PS-7604B/C4001		C-00003889	2603307834			1	
7		BEZEL ASS'Y ABS 94HB PS-7604B/C4001		C-00004513	2603307600				1
8		CABI BACK ASSY ABS 94HB PANTONE BLACK C=4001		C-00004514	2603407617				1
9		BASE ASSY ABS94HB PANTONE BLACK C=4001		C-00004515	2603207021				1
10	Cables:	I/O CABLE D15/C13 20276(3+6) 1.83M BLK		A-VIO-0118-0034	2427501174 2427501174P	P961		1	1
11	Documentation:	CD-OWNER GUIDE VE510s-4 HSD MX17A DATE 050517		DC-00003890	2438501204	6P80		1	
12		CD-OWNER GUIDE VE510S-4 CPT VIZARD DC:050517		DC-00004516	2438501201P	6P80			1
13		GUARANT CARD VIEWSONIC VA721/VE910 QSG		DC-00003455	2002310496 2002310496P	6P84		1	1
15	Electronic Components:	LCD PANEL HSD150MX17-A00 (A) 16ms HSD		E-00003886	2212008200	V901		1	
16		LCD PANEL CLAA150XP02 CPT		E-00004511	2212006000P	V901			1
17	Packing Material:	CARTON BOX VE510S-4 VLCDS27996-2W		P-00003891	2011121011 2011121011P	6P01		1	1
18		POLYFOAM VA521 EPS (L)		P-FM-0602-0855	2012176900 2012176900P	6P20		1	1
19		POLYFOAM VA521 EPS (R)		P-FM-0602-0856	2012177000 2012177000P	6P21		1	1
20	Plastics:	STAND ABS94HB PANTONE BLACK C=4001		PL-PS-0715-0986	2028258002	5B01		1	

M-Model for VSA

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty	Q'ty
1	Accessories:	POWER CORD USA WALL 1.83M BLACK		A-PC-0106-0121	2427130046	P951		1	

P-Model for VSI

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty	Q'ty
1	Accessories:	AC POWER CORD TAIWAN WALL 1.83M BLACK		A-00003458	2427130123A	P951		1	

G-Model for VSCN

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty	Q'ty
1	Accessories:	POWER CORD CHINA WALL 1.83M BLACK		A-PC-0106-0277	2427130097	P951		1	1
2	Documentation:	GUARANT CARD VIEWSONIC WARRANTY CARD-C 2004		DC-00003461	2002310402 2002310402P	6P07		1	1

E-Model for VSE

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty	Q'ty
1	Accessories:	POWER CORD GERMAN WALL 1.83M BLACK		A-PC-0106-0138	2427130047	P951		1	

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.
Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR approved by ViewSonic Corporation. This is to eliminate repeated cross checks of each item between this version and prior versions.

RECOMMENDED SPARE PARTS LIST (VE510b-4)

ViewSonic Model Number: VLCDS27996-3W

Rev: 1b

Serial No Prefix: PUJ

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Panel Sources	
								Hanstarr (16ms)	CPT (16ms)
1	**Board Assembly:**	PCB ASS'Y BLOCK (CON)		B-CB-0206-0177	6202-7956908101			1	1
2		PCB ASS'Y BLOCK (MAIN)		B-00003882	6201-7956908242			1	
3		PCB ASS'Y BLOCK (MAIN)		B-00004506	6201-7956908272				1
4		PCB ASS'Y BLOCK (POWER)		B-00003883	6204-7956908141			1	
5		PCB ASS'Y BLOCK (POWER)		B-00004507	6204-7956908171				1
6	**Cabinets:**	BEZEL ASS'Y ABS 94HB MIDNIGHT GRAY		C-00003884	2603307835			1	
9		BEZEL ASS'Y ABS 94HB MIDNIGHT GRAY		C-FP-0301-0991	2603307601				1
8		BASE ASSY ABS94HB PANTONE BLACK C=4001		C-00004508	2603207022				1
10		BACK COVER ABS 94HB MIDNIGHT GRAY		C-00004509	2603407609				1
11	**Cables:**	I/O CABLE D15/C13 20276(3+6) 1.83M BLK		A-VIO-0118-0034	2427501174 2427501174P	P961		1	1
12	**Documentation:**	CD-OWNER GUIDE VE510b-4 HSD MX17A DATE 050517		DC-00003885	2438501205	6P80		1	1
13		CD-OWNER GUIDE VE510B-4 CPT WIZARD DC:050517		DC-00004510	2438501202P			1	1
14		GUARANT CARD VIEWSONIC VA721/VE910 QSG		DC-00003455	2002310496 2002310496P	6P84		1	1
15	**Electronic Components:**	LCD PANEL HSD150MX17-A00 (A) 16ms HSD		E-00003886	2212008200	V901		1	
16	**Electronic Components:**	LCD PANEL CPT CLAA150XP02 CPT		E-00004511	2212006000P	V901			1
17	**Packing Material:**	CARTON BOX VE510b-4 VLCDS27996-3W		P-00003887	2011121012 2011121012P	6P01		1	1
18		POLYFOAM VA521 EPS (L)		P-FM-0602-0855	2012176900 2012176900P	6P20		1	1
19		POLYFOAM VA521 EPS (R)		P-FM-0602-0856	2012177000 2012177000P	6P21		1	1
7	**Plastics:**	STAND ABS 94HB MIDNIGHT GRAY		PL-PS-0715-0992	2028258003	5B01		1	

M-Model for VSA

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty	Q'ty
1	**Accessories:**	POWER CORD USA WALL 1.83M BLACK		A-PC-0106-0121	2427130046	P951		1	

P-Model for VSI

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty	Q'ty
1	**Accessories:**	AC POWER CORD TAIWAN WALL 1.83M BLACK		A-00003458	2427130123A	P951		1	

G-Model for VSCN

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty	Q'ty
1	**Accessories:**	POWER CORD CHINA WALL 1.83M BLACK		A-PC-0106-0277	2427130097 2427130097P	P951		1	1
2	**Documentation:**	GUARANT CARD VIEWSONIC WARRANTY CARD-C 2004		DC-00003461	2002310402 2002310402P	6P07		1	1

E-Model for VSE

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty	Q'ty
1	**Accessories:**	POWER CORD GERMAN WALL 1.83M BLACK		A-PC-0106-0138	2427130047	P951		1	

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.
Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR

BOM LIST (VE510s-4)

ViewSonic Model Number: VLCDS27996-2W

Rev: 1a

Serial No. Prefix: PUK

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	C-FP-0301-0993	2024266703	FRONT BEZEL ABS 94 HB PS-7604B/C4001	1F01		1
2	M-MS-0808-9397	2053753701	LED INDIC.-PWR VA521 PMMA 94HB	1F02		1
3	PL-FK-0709-0151	2044266102	FUNCTION KEY VA521 ABS 94HB AL-PLATE	1F03		1
4	M-MS-0808-9213	2051352000	NAME PLATE VIEWSONIC LOGO 3 PIN VA521	1F04		1
5	M-MS-0808-9214	2051352100	NAME PLATE VIEWSONIC E015-006 3-BIRD LOGO	1F05 RA		1
6	M-00003535	2051352101	NAME PLATE VIEWSONIC 3-BIRD LOGO TNP	1F05 RB		1
7	#N/A	2071969100	METAL FITTG SECC T=0.8MM CPT XP02 PANEL	1F11		1
8	M-MS-0808-9219	2072456900	INSULATOR MYLAR BLACK 94V0 T=0.5 POWER	1F12		1
9	#N/A	2072457300	INSULATOR MYLAR BLACK 94V0 T=0.5 BOTTOM	1F13		1
10	M-SCW-0824-6715	2080002200	SCREW,SPE L355 M3x6 DH NICKEL-PLATED	1F14		4
11	M-SCW-0824-6820	2085740062	SCREW,B OTW+ B,OTW+,M4x6	1F15		1
12	M-MS-0808-9220	2071668700	SHIELD PLATE SPTE T=0.3MM FOR MAIN BOARD	1F16		1
13	M-SCW-0824-6719	2082630062	SCREW M3X6 P=0.5	1F17 1F23		2
14	M-SCW-0824-0811	2080003700	SCREW,SPE 1SZZTER001A M3*6L MSWR17/FZMY1	1F18 1F19		8
15	M-MS-0808-9221	2072457000	INSULATOR MYLAR BLACK 94V0 T=0.5 SIGNAL	1F20		1
16	M-MS-0808-9222	2071670400	SHIELD PLATE SPTE T=0.3MM (TOP)	1F21		1
17	M-MS-0808-9223	2071670500	SHIELD PLATE SPTE T=0.3MM (DOWN)	1F22		1
18	#N/A	2061455300	BUSHING 10*15*7.5MM TAPE=T4000	1F26		1
19	C-BC-0302-0583	2022262202	CABI BACK ABS 94HB PANTONE BLACK C=4001	2C01		1
20	M-MS-0808-9215	2051352200	NAME PLATE VIEWSONIC E015-017	2C02		1
21	M-BK-0805-0070	2071869400	BRACKET,FIX METAL PLATE 1.0MM KENSINGTON	2C03		1
22	M-MS-0808-9408	2061453400	BUSHING VE710 PLUG RUBBER	2C04		4
23	M-MS-0808-9216	2106656300	HINGE VA521 -5度~ + 20度(F.S)	2C20 RA		1
24	M-MS-0808-9217	2106656301	HINGE VA521 -5'~+20' (T.L)	2C20 RB		1
25	M-MS-0808-9224	2105251600	SPRING PLATE VA521 PB-CU T=0.2MM	2C21		1
26	M-SCW-0824-6745	2084740104	SCREW,BND T+ M4X10(BND T+) (BLK)	2C23		2
27	PL-PS-0715-0986	2028258002	STAND ABS94HB PANTONE BLACK C=4001	5B01		1
28	M-MS-0808-9225	2071969200	METAL FITTG SECC T=1MM STAND	5B02		1
29	PL-PD-0714-0113	2039819301	FOOT PAD RUBBER O20*2TMM SQUARE GRAIN	5B03		5
30	M-SCW-0824-0123	2084740102	SCREW,BND T+ M4X10(BND T+)	5B04		2
31	M-SCW-0824-0812	2084730062	SCREW,BND T+ M3X6(BND T+)	5B05		2
32	M-SCW-0824-0440	2085740102	SCREW,B OTW+ SCREW B OTW+ M4X10	5B06		4
33	M-CV-0830-0281	2027258402	DUST COVER VA521 ABS 94HB AL-PALTE	5B07		2
34	M-LB-0813-0769	2055613293	LABEL VIEWSONIC OPEN STAND LABEL-LCD	5B10		1
35	P-00003891	2011121011	CARTON BOX VE510S-4 VLCDS27996-2W	6P01		1
36	#N/A	2055632086	LABEL VE510S-2 VLCDS27996-2W (M) HS A	6P02		1
37	M-LB-0813-0987	2055636023	LABEL VE510S-2 VLCDS27996-2W SMALL	6P05		1
38	DC-00001531	2055613436	LABEL VIEWSONIC INSET PAGE-1024*768	6P06		1
39	M-LB-0813-0856	2055613379	LABEL ViewSonic CONTAINER LABEL	6P11		0.01042
40	M-LB-0813-0530	2055617101	LABEL 10*20 HI-POT TESTED 0K	6P13		1
41	M-LB-0813-0959	2055613392	LABEL VSC HIGH VOLTAGE WARNING LABEL	6P14		1
42	P-FM-0602-0855	2012176900	POLYFOAM VA521 EPS (L)	6P20		1
43	P-FM-0602-0856	2012177000	POLYFOAM VA521 EPS (R)	6P21		1
44	#N/A	2055131868	LABEL VE510S-2 VLCDS27996-2W H STAR	6P50		1
45	M-LB-0813-0002	2056603050	SERIAL LABEL VIEWSONIC LCD SERIAL LABEL	6P51 6P54		2
46	M-LB-0813-0528	2055103400	LABEL JK0936F WEN	6P52		1
47	DC-00003538	2055613459	LABEL VIEWSONIC Hg WARNING LABEL	6P53		1
48	M-MS-0808-0027	2013150901	POLYETHY BAG 700LX600WX0.03tmm PE-LD ADD>PE	6P60		1
49	DC-00003890	2438501204	CD-OWNER GUIDE VE510s-4 HSD MX17A DATE 050517	6P80		1
50	DC-00003455	2002310496	GUARANT CARD VIEWSONIC VA721/VE910 QSG	6P84		1
51	M-MS-0808-1316	2013222536	POLYETHY BAG 250mmx350mmxt0.3 ADD>PE-LD<	6P85		1
52	#N/A	2072260600	HEAT SINK AL 72*20*T1.5MM	9H01		1
53	#N/A	2105251400	SPRING PLATE SPTE T=0.4MM (GROUND PLATE)	9H10		4
54	M-SCW-0824-0285	2084730082	SCREW,BND T+ M3X8(BND T+)	9S01 2C22		7
55	#N/A	2346147396	CAP,CHIP 125'C CS 0603/X7R/50V 0.047u K T	C102 RA C103 RA C104 RA C106 RA C107 RA C109 RA		6
56	#N/A	2346247396	CAP,CHIP 125'C CS 0603/X7R/25V 0.047u K T	C102 RB C103 RB C104 RB C106 RB C107 RB C109 RB		6
57	E-C-0404-4224	2341147096	CAP,CHIP 125'C CS 0603/COG/50V 47p J T	C111 C113 C114 C115		4
58	E-C-0404-3815	2346410496	CAP,CHIP 85'C CS 0603/Y5V/50V 0.1u Z T	C116 C122 C133 C134 C135 C136 C137 C138 C139 C140 C141 C142 C143 C148 C149 C151 C152 C153 C154 C156 C160 C161 C162 C163 C166 C167 C168 C169 C170 C172 C174 C175 C178 C179 C180		35

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
59	#N/A	2336310613	CAP,MINI ELE 105'C EC 10u/ 16V 4*7 P=2.5 T	C117		1
60	E-C-0404-4423	2341122096	CAP,CHIP 125'C CS 0603/COG/50V 22p J T	C119 C121 C145 C146		4
61	#N/A	2336322613	CAP,MINI ELE 105'C EC 22u/ 16V 4*7 P=2.5 T	C132 C144 C147 C159 C171 C181		6
62	E-00000999	2336347613	CAP,MINI ELE 105'C EC 47u/ 16V 5*7 P=2.5 T	C155 C164 C165 C176 C177		5
63	#N/A	2300947401	CAP,MTL MINI X2 0.47u/275V P=15.0 K C	C801		1
64	#N/A	2287133212	CAP,CER Y1 3300pF/250V P=10.0 M T	C802 C803		2
65	#N/A	2357568608	EC HI-RIPPLE 105C 400V EC 68u/400V 16*32 P=7.5 S	C805		1
66	#N/A	2297427212	CAP,PPP PPN 2700P/250V P=10.0 K K	C806		1
67	#N/A	2284110191	CAP,CER 125'C CC 100pF/1KV X7R P=5.0 K T	C807		1
68	#N/A	2283118191	CAP CER CC 180pF/500V Y5P P=5.0 K T	C808		1
69	E-C-0404-1850	2281410391	CAP,CER CC 0.01u/50V P=5.0 Z T	C809		1
70	#N/A	2333547691	CAP,ELE 105'C EC 47u/ 35V 6.3*11 P=5.0 T	C810 C919		2
71	#N/A	2333522691	CAP ELE 105'C EC 22u/ 35V 5*11 P=5.0 T	C811		1
72	#N/A	2284110291	CAP,CER CC 1000P/1KV X7R P=5.0 K T	C814 C815		2
73	E-00003541	2335310841	CAP,ELE LOW ESR 105'C EC 1000u/ 16V 10*16 P=5.0 C	C816 C817 C819		3
74	E-C-0404-3890	2333347701	CAP,ELE 105'C EC 470u/ 16V 10*12.5 P=5.0 C	C820 C901		2
75	E-C-0404-1860	2290410391	CAP,MYL (MEF COATING MIN) MEF 0.01u/50V P=5.0 J T	C821 C910		2
76	E-C-0404-1834	2333647591	CAP,ELE 105'C EC 4.7u/ 50V 5*11 P=5.0 T	C822		1
77	E-C-0404-1856	2287210312	CAP,CER Y2 0.01uF/250V P=10.0 M C	C823		1
78	E-C-0404-1815	2281410491	CAP,CER CC 0.1u/ 50V Y5V P=5.0 Z T	C825 C902 C908 C909 C916		5
79	E-C-0404-1835	2281433291	CAP,CER CC 3300pF/50V Z5V P=5.0 Z T	C903 C904		2
80	E-00003311	2302010491	CAP,MTL MEF 0.1uF/50V P=5.0 J T	C905		1
81	E-C-0404-3470	2272133191	CAP,CER TC 330p/50V CH P=5.0 J T	C906		1
82	#N/A	2275450901	CAP,CER TC 5P/3KV SL P=7.5 J C	C911		1
83	E-C-0404-1642	2290433291	CAP,MYL (MEF COATING MIN) MEF 3300p/50V P=5.0 J T	C912		1
84	#N/A	2290422291	CAP,MYL (MEF COATING MIN) MEF 2200p/50V P=5.0 J T	C913		1
85	#N/A	2275420001	CAP CER TC 20P/3KV SL P=7.5 J C	C914 C915		2
86	E-00004447	2290427391	CAP,MYL (MEF COATING MIN) MEF 0.027u/50V P=5.0 J T	C917		1
87	E-D-0403-1667	2364600196	DIODE,SWITCH SMD (NG PARTS) LL4148 SOD80C TEMIC	D101 RA D103 RA D104 RA D106 RA D107 RA D108 RA D113 RA D115 RA D116 RA D117 RA		10
88	E-00003830	2364601396	DIODE,SWITCH SMD 1N4148W-7 SOD123 DIODES	D101 RB D103 RB D104 RB D106 RB D107 RB D108 RB D113 RB D115 RB D116 RB D117 RB		10
89	E-D-0403-1892	2364200896	DIODE,RECT(SMD) BAS32L SOD-80 PHILIPS	D101 RC D103 RC D104 RC D106 RC D107 RC D108 RC D113 RC D115 RC D116 RC D117 RC		10
90	#N/A	2364600496	DIODE,SWITCH SMD MM4148 SOD-80 GRANDE	D101 RD D103 RD D104 RD D106 RD D107 RD D108 RD D113 RD D115 RD D116 RD D117 RD		10
91	E-D-0403-1779	2364503996	DIODE,ZENER SMD BZV55-C5V6 5% SOD-80C PHILIPS	D105 RA D111 RA D112 RA		3
92	E-D-0403-2808	2364505616	DIODE,ZENER SMD TZMC5V6 SOD-80 5.2-6.0V VISHAY	D105 RB D111 RB D112 RB		3

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
93	E-D-0403-1666	2364500396	DIODE,ZENER SMD RLZ5.6B 5.45-5.73V LL-34 ROHM	D105 RC D111 RC D112 RC		3
94	#N/A	2364503696	DIODE,ZENER SMD BZV55-C3V6 SOD80C PHILIPS	D121 D122		2
95	M-MS-0808-6352	2363703800	LED LED 3f GRN/YEL	D701		1
96	E-D-0403-1531	2363221195	DIODE,RECT PG208 DO-15 PEC	D801 RA D802 RA D803 RA D804 RA		4
97	E-D-0403-2009	2363227295	DIODE,RECT 2A07 DO-15 1000V/2A TSC	D801 RB D802 RB D803 RB D804 RB		4
98	#N/A	2363233795	DIODE,RECT PS2010 2A/1000V DO-15 PEC	D801 RC D802 RC D803 RC D804 RC		4
99	#N/A	2363231995	DIODE,RECT UF4007 PEC	D806 RA		1
100	#N/A	2363223195	DIODE,RECT UF4007 DO-204AL GS	D806 RB		1
101	E-D-0403-0462	2363215495	DIODE,RECT (EOL) BYV26C SOD57 PHILIPS	D806 RC		1
102	E-D-0403-1465	2363220395	DIODE,RECT UF4004G-T/B DO-41 PEC	D807 RA		1
103	E-D-0403-1005	2363226995	DIODE,RECT UF4004 DO-41 CHENMKO	D807 RB		1
104	E-D-0403-0531	2363600195	DIODE,SWITCH 1N4148 DO-35	D808 D902 D903 D904 D905		5
105	#N/A	2363300282	DIODE,SCHOTTKY 31DQ06FC3 60V/1.6A H=9.8 IR	D809 RA		1
106	#N/A	2363231212	DIODE,RECT SB360(F9) 3A/60V DO-201AD PEC	D809 RB		1
107	#N/A	2363234012	DIODE,RECT SR306 DO-201AD MOSPEC	D809 RC		1
108	E-D-0403-1501	2363231612	DIODE,RECT 31DF2 IR	D811		1
109	E-D-0403-1532	2363505995	DIODE,ZENER HZ12A-2 11.9-12.4V HITACHI	D812		1
110	#N/A	2363517695	DIODE,ZENER HZ18-2 17.5-18.3V HITACHI	D814 RA		1
111	#N/A	2363518385	DIODE,ZENER BZX79B18 17.6-18.4V PHILIPS	D814 RB		1
112	#N/A	2363517995	DIODE,ZENER TZX18B 17.5-18.3V TELEFUNKEN	D814 RC		1
113	#N/A	2364600996	DIODE,SWITCH SMD BAV99 SOT-23 DIODES	D901 RA		1
114	#N/A	2364601096	DIODE,SWITCH SMD BAV99 SOT-23 PHILIPS	D901 RB		1
115	#N/A	2363516895	DIODE,ZENER HZ6B-2 5.6-5.9V DO-35 HITACHI	D906		1
116	M-MS-0808-0854	2097400301	EYELET BSS3-1/2H T=0.25 SN 3μm	E801 E802 E803		3
117	E-FS-0410-0009	2213125207	FUSE 21502.5(2.5A) LITTEL	F801 RA		1
118	E-FS-0410-0102	2213125211	FUSE FUSE 2.5A/250V SG501302.5 PICO	F801 RB		1
119	E-IC-0401-4046	2365930996	IC,DIGITAL SMD RTD2013 PQFP128 Realtek	I101		1
120	E-IC-0450-0041	2365929996	IC,DIGITAL SMD MTV312MV64-AJ PLCC44 MYSON	I104		1
121	E-IC-0401-2269	2365915896	IC,DIGITAL SMD 24LC16B/SN SO-8 MICROCHIP	I105 RA		1
122	#N/A	2365100996	IC,MEMORY AT24C16AN-10SI-2.7 SO-8 ATMEL	I105 RB		1
123	#N/A	2365812696	IC,LINEAR(SMD) CM2860K1M223 SOT223 CHAMPION	I106 RA		1
124	#N/A	2365813196	IC,LINEAR(SMD) AME8805DEGT SOT-223 AME	I106 RB		1
125	#N/A	2365815096	IC,LINEAR(SMD) AME8805MEGT SOT-223 AME	I106 RC		1
126	E-00002343	2365330900	IC,LINEAR LD7552IN DIP-8 LEADTREND	I801		1
127	E-PC-0411-0083	2362401800	PHOTO COUPLR TLP621(D4-GR-LF2) TOSHIBA	I802 RA		1
128	E-PC-0411-0082	2362401600	PHOTO COUPLR TLP721F(D4-GR) TOSHIBA	I802 RB		1
129	#N/A	2365328191	IC,LINEAR AP431VA TO-92 ATC	I803 RA		1
130	E-IC-0401-2152	2365321991	IC,LINEAR KA431AZTA TO-92 FAIRCHILD	I803 RB		1
131	#N/A	2365327691	IC,LINEAR CM431BCN TO-92 CHAMPION	I803 RC		1
132	E-IC-0401-1270	2365319391	IC,LINEAR TL431CLP TO-92 TI	I803 RD		1
133	#N/A	2365331000	IC,LINEAR OZ9930D PDIP-8 O2-MICRO	I901		1
134	E-Q-0402-7030	2360608596	FET,N-CH(SMD) AP9960M SO-8 APEC	I902 RA		1
135	#N/A	2360609296	FET,N-CH(SMD) FDS9945 SO-8 FAIRCHILD	I902 RB		1
136	M-WR-0828-0450	2428106075	JUMPER 0.6f ＊*7.5mm	J801 J802 J803 J808 J809 J810 J811 J903 J909 J910 J912		11
137	M-WR-0828-0460	2428106125	JUMPER 0.6f *12.5mm	J804		1
138	M-WR-0828-0478	2428106100	JUMPER 0.6f *10.0mm	J805		1
139	M-WR-0828-0455	2428106050	JUMPER 0.6f *5.0mm	J812 L804		2
140	M-WR-0828-0478	2428106100	JUMPER 0.6f *10.0mm	J904		1
141	M-WR-0828-0460	2428106125	JUMPER 0.6f *12.5mm	J905		1
142	M-WR-0828-0478	2428106100	JUMPER 0.6f *10.0mm	J906		1
143	M-WR-0828-0478	2428106100	JUMPER 0.6f *10.0mm	J907		1
144	M-WR-0828-0460	2428106125	JUMPER 0.6f *12.5mm	J908		1
145	#N/A	2434410150	AL SHIELDING TAPE W25*L15mm (AL)	K902		1
146	E-R-0405-6600	2253200096	RES,CHIP 1/10W RC 0603 1/10W 0 ohm J T	L101 L102 L103 R102 R105 R107 R111 R125 R143 R167 R197		11
147	#N/A	2379312196	BEAD,HI-IMPEDANCE Z= 120 ohm(100MHZ~) 0603 200mA	L104 L105		2
148	E-L-0407-1535	2379820196	BEAD,HI-IMPEDANCE Z= 200 ohm(100MHZ~) 0805 200mA	L106 L107 L108 L109 L110 L111 L112 L113		8
149	M-WR-0828-0460	2428106125	JUMPER 0.6f *12.5mm	L802		1
150	#N/A	2371145301	COIL,CHOKE ET-20 45mH 2UEW 0.26mm/55+55Ts	L805		1
151	#N/A	2371150901	COIL,CHOKE R3*15 5uH 0.5mm*19Ts I=2.0A	L807		1
152	#N/A	2404301112	CONNECTOR JST PH 13P SIDE P=2.0 OR EQUAL	P101		1
153	M-MS-0808-6355	2404301107	CONNECTOR JST PH 8P SIDE P=2.0 OR EQUAL	P104		1
154	#N/A	2404371008	CONNECTOR JST PH 9P TOP P=2.0 OR EQUAL	P105		1
155	#N/A	2404222230	PIN PLUG 2*15P TOP P=2.0 3PIN CUT	P107		1
156	M-WR-0828-6626	2427408181	WIRE HARNESS 8/8P H/B 1061#26 L=180mm P=2.0	P701		1
157	#N/A	2427409001	WIRE HARNESS 9/9P H/B 1007#26 L=80mm P=2.0	P801		1

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158	#N/A	2404380202	CONNECTOR WBT CONN. 2P P=8.0mm	P901 P902		2
159	A-00003561	2427130046	POWER CORD USA WALL 1.83M BLACK	P951		1
160	A-VIO-0118-0034	2427501174	I/O CABLE D15/C13 20276(3+6) 1.83M BLK	P961		1
161	CB-000024422	2427430002	WIRE HARNESS 20/30P H/H 2725#28+128C L=150	P981		1
162	#N/A	2360100696	XISTOR,PNP R SMD PMBS3906 SOT-23 PHILIPS	Q101 RA Q102 RA Q103 RA Q107 RA Q108 RA Q804 RA		6
163	E-Q-0402-1607	2360100796	XISTOR,PNP R SMD MMBT3906 SOT-23 DIODES	Q101 RB Q102 RB Q103 RB Q107 RB Q108 RB Q804 RB		6
164	E-Q-0402-1375	2360100396	XISTOR,PNP R SMD MMBT3906-7 SOT-23 VISHAY	Q101 RC Q102 RC Q103 RC Q107 RC Q108 RC Q804 RC		6
165	#N/A	2360501396	FET,P-CH SMD AP2305N SOT-23 APEC	Q104 RA		1
166	#N/A	2360501296	FET,P-CH SMD AO3411 SOT-23 ALPHA	Q104 RB		1
167	E-Q-0402-1624	2360301696	XISTOR,NPN R SMD PMBS3904 SOT-23 PHILIPS	Q106 RA Q802 RA		2
168	E-Q-0402-1180	2360301296	XISTOR,NPN R SMD MMBT3904 SOT-23 DIODES	Q106 RB Q802 RB		2
169	E-Q-0402-1087	2360301896	XISTOR,NPN R SMD MMBT3904LT1 SOT-23 LRC	Q106 RC Q802 RC		2
170	E-Q-0402-1378	2360300596	XISTOR,NPN R SMD MMBT3904-7 SOT-23 VISHAY	Q106 RD Q802 RD		2
171	E-Q-0402-1376	2360300296	XISTOR,NPN R SMD HMBT3904 SOT-23 HI-SIN	Q106 RE Q802 RE		2
172	E-00004445	2361611200	FET,N-CH AP04N70BF-A TO-220FM APEC	Q801 RA		1
173	E-00002345	2361610700	FET,N-CH SSS4N60B TO-220F FAIRCHILD	Q801 RB		1
174	E-00002346	2361611700	FET,N-CH FQPF5N60C TO-220F FAIRCHILD	Q801 RC		1
175	E-00004446	2361611800	FET,N-CH AP03N70F-H TO-220FM APEC	Q801 RD		1
176	E-Q-0402-0356	2361315391	XISTOR,NPN R 2SC2001-L TO-92 NEC	Q803 RA		1
177	E-Q-0402-1526	2361412691	XISTOR,NPN A KSD1616A-G TO-92 FAIRCHILD	Q803 RB		1
178	#N/A	2360608496	FET,N-CH(SMD) 2N7002K SOT-23 VISHAY	Q901 RA Q902 RA		2
179	#N/A	2360609096	FET,N-CH(SMD) 2N7002K SOT-23 PHILIPS	Q901 RB Q902 RB		2
180	#N/A	2360609196	FET,N-CH(SMD) 2N7002L SOT-23 ON	Q901 RC Q902 RC		2
181	E-Q-0402-0718	2361316191	XISTOR,NPN R 2PC945P TO-92 PHILIPS	Q903 RA Q905 RA		1
182	E-Q-0402-0428	2361302591	XISTOR,NPN R 2SC945-P TO-92 NEC	Q903 RB Q905 RB		2
183	E-Q-0402-0555	2361313691	XISTOR,NPN R KSC945CGTA TO-92 FAIRCHILD	Q903 RC Q905 RC		2
184	E-R-0405-6409	2253210196	RES,CHIP 1/10W RC 0603 1/10W 100 ohm J T	R103 R106 R108 R110 R112 R114 R116 R120 R134 R135 R144 R145 R150 R151 R152 R153 R154 R155 R156 R172 R176 R177 186		23
185	#N/A	2251275096	RES,CHIP 1/10 RC 0603 1/10W 75 ohm F T	R104 R109 R113		3
186	E-R-0405-6604	2253222296	RES,CHIP 1/10W RC 0603 1/10W 2.2Kohm J T	R118 R119 R139 R140		4
187	E-R-0405-6411	2253210396	RES,CHIP 1/10W RC 0603 1/10W 10Kohm J T	R121 R122 R171 R180		4
188	E-R-0405-6410	2253210296	RES,CHIP 1/10W RC 0603 1/10W 1Kohm J T	R123 R124 R133 R161 R188 R192		6
189	E-R-0405-6601	2253210596	RES,CHIP 1/10W RC 0603 1/10W 1Mohm J T	R127 R158		2
190	E-R-0405-6419	2253247296	RES,CHIP 1/10W RC 0603 1/10W 4.7Kohm J T	R128 R129 R149 R157 R159 R163 R173		7
191	#N/A	2251290916	RES,CHIP 1/10 RC 0603 1/10W 9.09Kohm F T	R141		1
192	#N/A	2251233216	RES,CHIP 1/10 RC 0603 1/10W 3.32Kohm F T	R147		1
193	E-R-0405-7000	2253222196	RES,CHIP 1/10W RC 0603 1/10W 220 ohm J T	R182		1
194	E-R-0405-5988	2253300096	RES,CHIP 1/8 RC 0805 1/8 W 0ohm J T	R189		1
195	E-R-0405-6605	2253227296	RES,CHIP 1/10W RC 0603 1/10W 2.7Kohm J T	R191		1
196	E-TH-0416-0042	2229201212	THERMISTOR,PTH SCK-103 10+-20% 3A THINKING	R802		1
197	#N/A	2253456496	RES,CHIP 1/4 RC 1206 1/4 W 560Kohm J T	R803 R804 R805 R830 R835		5
198	#N/A	2232656395	RES,CBN 1/2 RD 1/2W 56Kohm J T52	R806		1
199	E-R-0405-2715	2233422095	RES,CBN 1/4 S RD 1/4WS 22 ohm J T52	R807 R817 R832		3
200	#N/A	2251410036	RES,CHIP 1/4 RC 1206 1/4 W 100Kohm F T	R808		1
201	E-R-0405-3216	2233447095	RES,CBN 1/4 S RD 1/4WS 47 ohm J T52	R809		1
202	#N/A	2253410096	RES,CHIP 1/4 RC 1206 1/4 W 10ohm J T	R810		1
203	#N/A	2251440286	RES,CHIP 1/4 RC 1206 1/4 W 4.02 ohm F T	R813 R814 R815 R816		4
204	E-R-0405-2725	2233410095	RES,CBN 1/4 S RD 1/4WS 10 ohm J T52	R818 R831 R910		3
205	E-R-0405-3441	2233412395	RES,CBN 1/4 S RD 1/4WS 12Kohm J T52	R819		1
206	E-R-0405-0727	2239222015	RES,PRE 1/4 S RN 1/4WS 2.2Kohm F T52	R820		1
207	#N/A	2239210005	RES,PRE 1/4 S RN 1/4WS 100 ohm F T52	R821		1

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208	#N/A	2239227415	RES,PRE 1/4 S RN 1/4WS 2.74Kohm F T52	R822		1
209	E-R-0405-0748	2239220025	RES,PRE 1/4 S RN 1/4WS 20Kohm F T52	R823		1
210	#N/A	2232412295	RES,CBN 1/4 RD 1/4W 1.2Kohm J T52	R824		1
211	#N/A	2235647013	RES,MTL 3 RS 3WS 47 ohm J P=20.0	R826		1
212	E-R-0405-1757	2233410195	RES,CBN 1/4 S RD 1/4WS 100 ohm J T52	R827		1
213	E-R-0405-3214	2233410395	RES,CBN 1/4 S RD 1/4WS 10Kohm J T52	R828		1
214	#N/A	2253433296	RES,CHIP 1/4 RC 1206 1/4 W 3.3Kohm J T	R829 R841		2
215	#N/A	2253410296	RES,CHIP 1/4 RC 1206 1/4 W 1Kohm J T	R833 R839		2
216	#N/A	2251453636	RES,CHIP 1/4 RC 1206 1/4 W 536Kohm F T	R836 R837 R838		3
217	E-00003854	2253427196	RES,CHIP 1/4 RC 1206 1/4 W 270 ohm J T	R840		1
218	E-R-0405-3443	2233447995	RES,CBN 1/4 S RD 1/4WS 4.7 ohm J T52	R901 R902		2
219	#N/A	2253351596	RES,CHIP 1/8 RC 0805 1/8 W 5.1Mohm J T	R903		1
220	E-R-0405-5989	2253310096	RES,CHIP 1/8 RC 0805 1/8 W 10 ohm J T	R904 R905 R911		3
221	#N/A	2239282525	RES,PRE 1/4 S RN 1/4WS 82.5Kohm F T	R906		1
222	#N/A	2239290925	RES,PRE 1/4 S RN 1/4WS 90.9Kohm F T	R907		1
223	#N/A	2251310036	RES,CHIP 1/8 RC 0805 1/8 W 100Kohm F T	R908		1
224	#N/A	2253310596	RES,CHIP 1/8 RC 0805 1/8 W 1Mohm J T	R909 R920		2
225	E-R-0405-2367	2233422295	RES,CBN 1/4 S RD 1/4WS 2.2Kohm J T52	R912		1
226	E-R-0405-3221	2233410495	RES,CBN 1/4 S RD 1/4WS 100Kohm J T52	R913		1
227	E-R-0405-0946	2233412295	RES,CBN 1/4 S RD 1/4WS 1.2Kohm J T52	R915		1
228	#N/A	2242330595	HIGH VOLTAGE RESISTOR RD 1/2W 3.0Mohm J T52	R917		1
229	#N/A	2251349916	RES,CHIP 1/8 RC 0805 1/8W 4.99Kohm F T	R918		1
230	#N/A	2251341206	RES,CHIP 1/8 RC 0805 1/8W 412 ohm F T	R921		1
231	#N/A	2251335706	RES,CHIP 1/8 RC 0805 1/8 W 357 ohm F T	R924		1
232	E-R-0405-7116	2253400096	RES,CHIP 1/4 RC 1206 1/4 W 0ohm J T	R925		1
233	#N/A	2259210308	RES,CHIP NETWORKS 8P4R 1/16W 10Kohm J P=0.8	RN1 RN2 RN4		3
234	#N/A	2403702513	SWITCH,TACT TSTA-2 4.3mm 160g HUA-JIE	S701 S702 S703 S704 S705		5
235	#N/A	2407413100	SOCKET (AC INLET) 0711-2-P10-9 INALWAYS	S801 RA		1
236	#N/A	2407413300	SOCKET (AC INLET) SC-8R-F15A9 SUPERCOM	S801 RB		1
237	#N/A	2407200991	HOLDER,FUSE CQ-05T (5mm DIA FUSE) CONQUER	S802 S803		2
238	#N/A	2374228004	XFORMER,POWR ER-28 2UEW 0.27*2 32Ts 1.8mH	T801		1
239	#N/A	2374300700	XFORMER INVERTER EEL-19 16/2080Ts 0.4/0.045mm	T901		1
240	#N/A	2202518500	PCB MULTILAYER 17" LVDS M/B FR4*2 100*80	U101		1
241	#N/A	2202127100	PC BOARD VA521 KEY/B FR1 115*31	U701		1
242	#N/A	2202130400	PC BOARD JT166W18-1 P/B FR1 160*100	U801		1
243	E-00003624	2212008201	LCD PANEL HSD150MX17-A00 (A-) 16ms HSD	V901		1
244	E-X-0415-0119	2369103601	XTAL,OSC 12.000MHZ/49US 0.1mW/30pF	X101		1
245	E-X-0415-0112	2369103901	XTAL,OSC 24.576MHZ/49US 0.1mw/20pF	X102		1

BOM LIST (VE510b-4)

ViewSonic Model Number: VLCDS27996-3W

Rev: 1a

Serial No. Prefix: PUJ

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	C-FP-0301-0991	2024266704	FRONT BEZEL ABS 94 HBMIDNIGHT GRAY	1F01		1
2	M-MS-0808-9397	2053753701	LED INDIC.-PWR VA521 PMMA 94HB	1F02		1
3	PL-FK-0709-0151	2044266102	FUNCTION KEY VA521 ABS 94HB AL-PLATE	1F03		1
4	M-MS-0808-9213	2051352000	NAME PLATE VIEWSONIC LOGO 3 PIN VA521	1F04		1
5	M-MS-0808-9214	2051352100	NAME PLATE VIEWSONIC E015-006 3-BIRD LOGO	1F05 RA		1
6	M-00003535	2051352101	NAME PLATE VIEWSONIC 3-BIRD LOGO TNP	1F05 RB		1
7	#N/A	2071969100	METAL FITTG SECC T=0.8MM CPT XP02 PANEL	1F11		1
8	M-MS-0808-9219	2072456900	INSULATOR MYLAR BLACK 94V0 T=0.5 POWER	1F12		1
9	#N/A	2072457300	INSULATOR MYLAR BLACK 94V0 T=0.5 BOTTOM	1F13		1
10	M-SCW-0824-6715	2080002200	SCREW,SPE L355 M3x6 DH NICKEL-PLATED	1F14		4
11	M-SCW-0824-6820	2085740062	SCREW,B OTW+ B,OTW+,M4x6	1F15		1
12	M-MS-0808-9220	2071668700	SHIELD PLATE SPTE T=0.3MM FOR MAIN BOARD	1F16		1
13	M-SCW-0824-6719	2082630062	SCREW M3X6 P=0.5	1F17 1F23		2
14	M-SCW-0824-0811	2080003700	SCREW,SPE 1SZZTER001A M3*6L MSWR17/FZMY1	1F18 1F19		8
15	M-MS-0808-9221	2072457000	INSULATOR MYLAR BLACK 94V0 T=0.5 SIGNAL	1F20		1
16	M-MS-0808-9222	2071670400	SHIELD PLATE SPTE T=0.3MM (TOP)	1F21		1
17	M-MS-0808-9223	2071670500	SHIELD PLATE SPTE T=0.3MM (DOWN)	1F22		1
18	#N/A	2061455300	BUSHING 10*15*7.5MM TAPE=T4000	1F26		1
19	C-BC-0302-0597	2022262203	CABI BACK ABS 94HB MIDNIGHT GRAY	2C01		1
20	M-MS-0808-9215	2051352200	NAME PLATE VIEWSONIC E015-017	2C02		1
21	M-BK-0805-0070	2071869400	BRACKET,FIX METAL PLATE 1.0MM KENSINGTON	2C03		1
22	M-MS-0808-9408	2061453400	BUSHING VE710 PLUG RUBBER	2C04		4
23	M-MS-0808-9216	2106656300	HINGE VA521 -5度~ + 20度(F.S)	2C20 RA		1
24	M-MS-0808-9217	2106656301	HINGE VA521 -5'~+20' (T.L)	2C20 RB		1
25	M-MS-0808-9224	2105251600	SPRING PLATE VA521 PB-CU T=0.2MM	2C21		1
26	M-SCW-0824-6745	2084740104	SCREW,BND T+ M4X10(BND T+) (BLK)	2C23		2
27	PL-PS-0715-0992	2028258003	STAND ABS 94HB MIDNIGHT GRAY	5B01		1
28	M-MS-0808-9225	2071969200	METAL FITTG SECC T=1MM STAND	5B02		1
29	PL-PD-0714-0113	2039819301	FOOT PAD RUBBER O20*2TMM SQUARE GRAIN	5B03		5
30	M-SCW-0824-0123	2084740102	SCREW,BND T+ M4X10(BND T+)	5B04		2
31	M-SCW-0824-0812	2084730062	SCREW,BND T+ M3X6(BND T+)	5B05		2
32	M-SCW-0824-0440	2085740102	SCREW,B OTW+ SCREW B OTW+ M4X10	5B06		4
33	M-CV-0830-0281	2027258402	DUST COVER VA521 ABS 94HB AL-PALTE	5B07		2
34	M-LB-0813-0769	2055613293	LABEL VIEWSONIC OPEN STAND LABEL-LCD	5B10		1
35	P-00003887	2011121012	CARTON BOX VE510b-4 VLCDS27996-3W	6P01		1
36	#N/A	2055632087	LABEL VE510B-2 VLCDS27996-3W (M) HS A	6P02		1
37	M-LB-0813-0982	2055636024	LABEL VE510B-2 VLCDS27996-3W SMALL	6P05		1
38	DC-00001531	2055613436	LABEL VIEWSONIC INSET PAGE-1024*768	6P06		1
39	M-LB-0813-0856	2055613379	LABEL ViewSonic CONTAINER LABEL	6P11		0.01042
40	M-LB-0813-0530	2055617101	LABEL 10*20 HI-POT TESTED 0K	6P13		1
41	M-LB-0813-0959	2055613392	LABEL VSC HIGH VOLTAGE WARNING LABEL	6P14		1
42	P-FM-0602-0855	2012176900	POLYFOAM VA521 EPS (L)	6P20		1
43	P-FM-0602-0856	2012177000	POLYFOAM VA521 EPS (R)	6P21		1
44	#N/A	2055131867	LABEL VE510B-2 VLCDS27996-3W H- STAR	6P50		1
45	M-LB-0813-0002	2056603050	SERIAL LABEL VIEWSONIC LCD SERIAL LABEL	6P51 6P54		2
46	M-LB-0813-0528	2055103400	LABEL JK0936F WEN	6P52		1
47	DC-00003538	2055613459	LABEL VIEWSONIC Hg WARNING LABEL	6P53		1
48	M-MS-0808-0027	2013150901	POLYETHY BAG 700LX600WX0.03tmm PE-LD ADD>PE	6P60		1
49	DC-00003885	2438501205	CD-OWNER GUIDE VE510b-4 HSD MX17A DATE 050517	6P80		1
50	DC-00003455	2002310496	GUARANT CARD VIEWSONIC VA721/VE910 QSG	6P84		1

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
51	M-MS-0808-1316	2013222536	POLYETHY BAG 250mmx350mmxt0.3 ADD>PE-LD<	6P85		1
52	#N/A	2072260600	HEAT SINK AL 72*20*T1.5MM	9H01		1
53	#N/A	2105251400	SPRING PLATE SPTE T=0.4MM (GROUND PLATE)	9H10		4
54	M-SCW-0824-0285	2084730082	SCREW,BND T+ M3X8(BND T+)	9S01 2C22		7
55	#N/A	2346147396	CAP,CHIP 125'C CS 0603/X7R/50V 0.047u K T	C102 RA C103 RA C104 RA C106 RA C107 RA C109 RA		6
56	#N/A	2346247396	CAP,CHIP 125'C CS 0603/X7R/25V 0.047u K T	C102 RB C103 RB C104 RB C106 RB C107 RB C109 RB		6
57	E-C-0404-4224	2341147096	CAP,CHIP 125'C CS 0603/COG/50V 47p J T	C111 C113 C114 C115		4
58	E-C-0404-3815	2346410496	CAP,CHIP 85'C CS 0603/Y5V/50V 0.1u Z T	C116 C122 C133 C134 C135 C136 C137 C138 C139 C140 C141 C142 C143 C148 C149 C151 C152 C153 C154 C156 C160 C161 C162 C163 C166 C167 C168 C169 C170 C172 C174 C175 C178 C179 C180		35
59	#N/A	2336310613	CAP,MINI ELE 105'C EC 10u/ 16V 4*7 P=2.5 T	C117		1
60	E-C-0404-4423	2341122096	CAP,CHIP 125'C CS 0603/COG/50V 22p J T	C119 C121 C145 C146		4
61	#N/A	2336322613	CAP,MINI ELE 105'C EC 22u/ 16V 4*7 P=2.5 T	C132 C144 C147 C159 C171 C181		6
62	E-00000999	2336347613	CAP,MINI ELE 105'C EC 47u/ 16V 5*7 P=2.5 T	C155 C164 C165 C176 C177		5
63	#N/A	2300947401	CAP,MTL MINI X2 0.47u/275V P=15.0 K C	C801		1
64	#N/A	2287133212	CAP,CER Y1 3300pF/250V P=10.0 M T	C802 C803		2
65	#N/A	2357568608	EC HI-RIPPLE 105C 400V EC 68u/400V 16*32 P=7.5 S	C805		1
66	#N/A	2297427212	CAP,PPP PPN 2700P/250V P=10.0 K K	C806		1
67	#N/A	2284110191	CAP,CER 125'C CC 100pF/1KV X7R P=5.0 K T	C807		1
68	#N/A	2283118191	CAP CER CC 180pF/500V Y5P P=5.0 K T	C808		1
69	E-C-0404-1850	2281410391	CAP,CER CC 0.01u/50V P=5.0 Z T	C809		1
70	#N/A	2333547691	CAP,ELE 105'C EC 47u/ 35V 6.3*11 P=5.0 T	C810 C919		2
71	#N/A	2333522691	CAP ELE 105'C EC 22u/ 35V 5*11 P=5.0 T	C811		1
72	#N/A	2284110291	CAP,CER CC 1000P/1KV X7R P=5.0 K T	C814 C815		2
73	E-00003541	2335310841	CAP,ELE LOW ESR 105'C EC 1000u/ 16V 10*16 P=5.0 C	C816 C817 C819		3
74	E-C-0404-3890	2333347701	CAP,ELE 105'C EC 470u/ 16V 10*12.5 P=5.0 C	C820 C901		2
75	E-C-0404-1860	2290410391	CAP,MYL (MEF COATING MIN) MEF 0.01u/50V P=5.0 J T	C821 C910		2
76	E-C-0404-1834	2333647591	CAP,ELE 105'C EC 4.7u/ 50V 5*11 P=5.0 T	C822		1
77	E-C-0404-1856	2287210312	CAP,CER Y2 0.01uF/250V P=10.0 M C	C823		1
78	E-C-0404-1815	2281410491	CAP,CER CC 0.1u/ 50V Y5V P=5.0 Z T	C825 C902 C908 C909 C916		5
79	E-C-0404-1835	2281433291	CAP,CER CC 3300pF/50V Z5V P=5.0 Z T	C903 C904		2
80	E-00003311	2302010491	CAP,MTL MEF 0.1uF/50V P=5.0 J T	C905		1
81	E-C-0404-3470	2272133191	CAP,CER TC 330p/50V CH P=5.0 J T	C906		1
82	#N/A	2275450901	CAP,CER TC 5P/3KV SL P=7.5 J C	C911		1
83	E-C-0404-1642	2290433291	CAP,MYL (MEF COATING MIN) MEF 3300p/50V P=5.0 J T	C912		1
84	#N/A	2290422291	CAP,MYL (MEF COATING MIN) MEF 2200p/50V P=5.0 J T	C913		1
85	#N/A	2275420001	CAP CER TC 20P/3KV SL P=7.5 J C	C914 C915		2
86	E-00004447	2290427391	CAP,MYL (MEF COATING MIN) MEF 0.027u/50V P=5.0 J T	C917		1

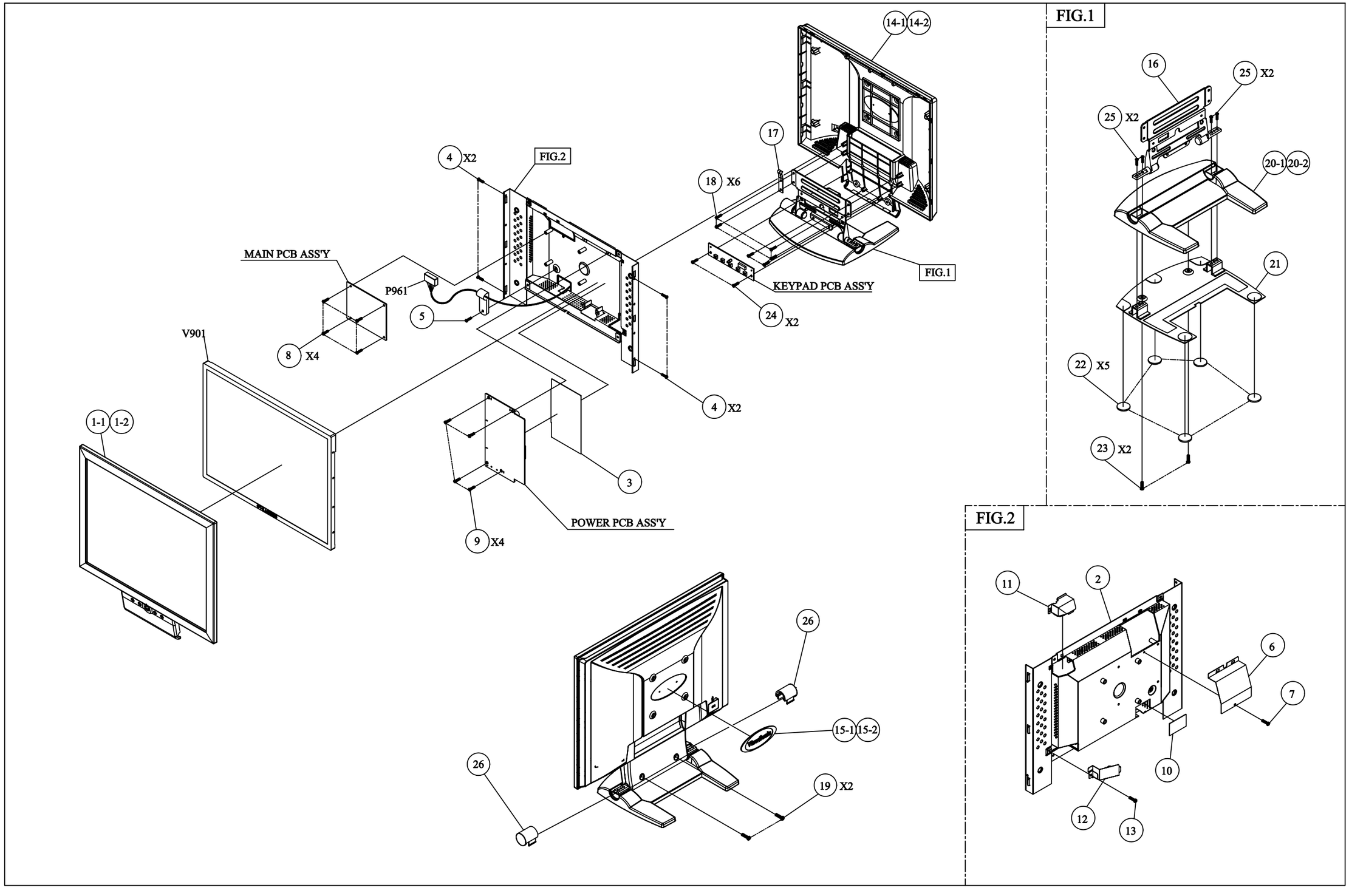
Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
87	E-D-0403-1667	2364600196	DIODE,SWITCH SMD (NG PARTS) LL4148 SOD80C TEMIC	D101 RA D103 RA D104 RA D106 RA D107 RA D108 RA D113 RA D115 RA D116 RA D117 RA		10
88	E-00003830	2364601396	DIODE,SWITCH SMD 1N4148W-7 SOD123 DIODES	D101 RB D103 RB D104 RB D106 RB D107 RB D108 RB D113 RB D115 RB D116 RB D117 RB		10
89	E-D-0403-1892	2364200896	DIODE,RECT(SMD) BAS32L SOD-80 PHILIPS	D101 RC D103 RC D104 RC D106 RC D107 RC D108 RC D113 RC D115 RC D116 RC D117 RC		10
90	#N/A	2364600496	DIODE,SWITCH SMD MM4148 SOD-80 GRANDE	D101 RD D103 RD D104 RD D106 RD D107 RD D108 RD D113 RD D115 RD D116 RD D117 RD		10
91	E-D-0403-1779	2364503996	DIODE,ZENER SMD BZV55-C5V6 5% SOD-80C PHILIPS	D105 RA D111 RA D112 RA		3
92	E-D-0403-2808	2364505616	DIODE,ZENER SMD TZMC5V6 SOD-80 5.2-6.0V VISHAY	D105 RB D111 RB D112 RB		3
93	E-D-0403-1666	2364500396	DIODE,ZENER SMD RLZ5.6B 5.45-5.73V LL-34 ROHM	D105 RC D111 RC D112 RC		3
94	#N/A	2364503696	DIODE,ZENER SMD BZV55-C3V6 SOD80C PHILIPS	D121 D122		2
95	M-MS-0808-6352	2363703800	LED LED 3f GRN/YEL	D701		1
96	E-D-0403-1531	2363221195	DIODE,RECT PG208 DO-15 PEC	D801 RA D802 RA D803 RA D804 RA		4
97	E-D-0403-2009	2363227295	DIODE,RECT 2A07 DO-15 1000V/2A TSC	D801 RB D802 RB D803 RB D804 RB		4
98	#N/A	2363233795	DIODE,RECT PS2010 2A/1000V DO-15 PEC	D801 RC D802 RC D803 RC D804 RC		4
99	#N/A	2363231995	DIODE,RECT UF4007 PEC	D806 RA		1
100	#N/A	2363223195	DIODE,RECT UF4007 DO-204AL GS	D806 RB		1
101	E-D-0403-0462	2363215495	DIODE,RECT (EOL) BYV26C SOD57 PHILIPS	D806 RC		1
102	E-D-0403-1465	2363220395	DIODE,RECT UF4004G-T/B DO-41 PEC	D807 RA		1
103	E-D-0403-1005	2363226995	DIODE,RECT UF4004 DO-41 CHENMKO	D807 RB		1
104	E-D-0403-0531	2363600195	DIODE,SWITCH 1N4148 DO-35	D808 D902 D903 D904 D905		5

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
105	#N/A	2363300282	DIODE,SCHOTTKY 31DQ06FC3 60V/1.6A H=9.8 IR	D809 RA		1
106	#N/A	2363231212	DIODE,RECT SB360(F9) 3A/60V DO-201AD PEC	D809 RB		1
107	#N/A	2363234012	DIODE,RECT SR306 DO-201AD MOSPEC	D809 RC		1
108	E-D-0403-1501	2363231612	DIODE,RECT 31DF2 IR	D811		1
109	E-D-0403-1532	2363505995	DIODE,ZENER HZ12A-2 11.9-12.4V HITACHI	D812		1
110	#N/A	2363517695	DIODE,ZENER HZ18-2 17.5-18.3V HITACHI	D814 RA		1
111	#N/A	2363518385	DIODE,ZENER BZX79B18 17.6-18.4V PHILIPS	D814 RB		1
112	#N/A	2363517995	DIODE,ZENER TZX18B 17.5-18.3V TELEFUNKEN	D814 RC		1
113	#N/A	2364600996	DIODE,SWITCH SMD BAV99 SOT-23 DIODES	D901 RA		1
114	#N/A	2364601096	DIODE,SWITCH SMD BAV99 SOT-23 PHILIPS	D901 RB		1
115	#N/A	2363516895	DIODE,ZENER HZ6B-2 5.6-5.9V DO-35 HITACHI	D906		1
116	M-MS-0808-0854	2097400301	EYELET BSS3-1/2H T=0.25 SN 3μm	E801 E802 E803		3
117	E-FS-0410-0009	2213125207	FUSE 21502.5(2.5A) LITTEL	F801 RA		1
118	E-FS-0410-0102	2213125211	FUSE FUSE 2.5A/250V SG501302.5 PICO	F801 RB		1
119	E-IC-0401-4046	2365930996	IC,DIGITAL SMD RTD2013 PQFP128 Realtek	I101		1
120	E-IC-0450-0041	2365929996	IC,DIGITAL SMD MTV312MV64-AJ PLCC44 MYSON	I104		1
121	E-IC-0401-2269	2365915896	IC,DIGITAL SMD 24LC16B/SN SO-8 MICROCHIP	I105 RA		1
122	#N/A	2365100996	IC,MEMORY AT24C16AN-10SI-2.7 SO-8 ATMEL	I105 RB		1
123	#N/A	2365812696	IC,LINEAR(SMD) CM2860K1M223 SOT223 CHAMPION	I106 RA		1
124	#N/A	2365813196	IC,LINEAR(SMD) AME8805DEGT SOT-223 AME	I106 RB		1
125	#N/A	2365815096	IC,LINEAR(SMD) AME8805MEGT SOT-223 AME	I106 RC		1
126	E-00002343	2365330900	IC,LINEAR LD7552IN DIP-8 LEADTREND	I801		1
127	E-PC-0411-0083	2362401800	PHOTO COUPLR TLP621(D4-GR-LF2) TOSHIBA	I802 RA		1
128	E-PC-0411-0082	2362401600	PHOTO COUPLR TLP721F(D4-GR) TOSHIBA	I802 RB		1
129	#N/A	2365328191	IC,LINEAR AP431VA TO-92 ATC	I803 RA		1
130	E-IC-0401-2152	2365321991	IC,LINEAR KA431AZTA TO-92 FAIRCHILD	I803 RB		1
131	#N/A	2365327691	IC,LINEAR CM431BCN TO-92 CHAMPION	I803 RC		1
132	E-IC-0401-1270	2365319391	IC,LINEAR TL431CLP TO-92 TI	I803 RD		1
133	#N/A	2365331000	IC,LINEAR OZ9930D PDIP-8 O2-MICRO	I901		1
134	E-Q-0402-7030	2360608596	FET,N-CH(SMD) AP9960M SO-8 APEC	I902 RA		1
135	#N/A	2360609296	FET,N-CH(SMD) FDS9945 SO-8 FAIRCHILD	I902 RB		1
136	M-WR-0828-0450	2428106075	JUMPER 0.6f ✻*7.5mm	J801 J802 J803 J808 J809 J810 J811 J903 J909 J910 J912		11
137	M-WR-0828-0460	2428106125	JUMPER 0.6f *12.5mm	J804		1
138	M-WR-0828-0478	2428106100	JUMPER 0.6f *10.0mm	J805		1
139	M-WR-0828-0455	2428106050	JUMPER 0.6f *5.0mm	J812 L804		2
140	M-WR-0828-0478	2428106100	JUMPER 0.6f *10.0mm	J904		1
141	M-WR-0828-0460	2428106125	JUMPER 0.6f *12.5mm	J905		1
142	M-WR-0828-0478	2428106100	JUMPER 0.6f *10.0mm	J906		1
143	M-WR-0828-0478	2428106100	JUMPER 0.6f *10.0mm	J907		1
144	M-WR-0828-0460	2428106125	JUMPER 0.6f *12.5mm	J908		1
145	#N/A	2434410150	AL SHIELDING TAPE W25*L15mm (AL)	K902		1
146	E-R-0405-6600	2253200096	RES,CHIP 1/10W RC 0603 1/10W 0 ohm J T	L101 L102 L103 R102 R105 R107 R111 R125 R143 R167 R197		11
147	#N/A	2379312196	BEAD,HI-IMPEDANCE Z= 120 ohm(100MHZ~) 0603 200mA	L104 L105		2
148	E-L-0407-1535	2379820196	BEAD,HI-IMPEDANCE Z= 200 ohm(100MHZ~) 0805 200mA	L106 L107 L108 L109 L110 L111 L112 L113		8
149	M-WR-0828-0460	2428106125	JUMPER 0.6f *12.5mm	L802		1
150	#N/A	2371145301	COIL,CHOKE ET-20 45mH 2UEW 0.26mm/55+55Ts	L805		1
151	#N/A	2371150901	COIL,CHOKE R3*15 5uH 0.5mm*19Ts I=2.0A	L807		1
152	#N/A	2404301112	CONNECTOR JST PH 13P SIDE P=2.0 OR EQUAL	P101		1
153	M-MS-0808-6355	2404301107	CONNECTOR JST PH 8P SIDE P=2.0 OR EQUAL	P104		1
154	#N/A	2404371008	CONNECTOR JST PH 9P TOP P=2.0 OR EQUAL	P105		1

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
155	#N/A	2404222230	PIN PLUG 2*15P TOP P=2.0 3PIN CUT	P107		1
156	M-WR-0828-6626	2427408181	WIRE HARNESS 8/8P H/B 1061#26 L=180mm P=2.0	P701		1
157	#N/A	2427409001	WIRE HARNESS 9/9P H/B 1007#26 L=80mm P=2.0	P801		1
158	#N/A	2404380202	CONNECTOR WBT CONN. 2P P=8.0mm	P901 P902		2
159	A-00003561	2427130046	POWER CORD USA WALL 1.83M BLACK	P951		1
160	A-VIO-0118-0034	2427501174	I/O CABLE D15/C13 20276(3+6) 1.83M BLK	P961		1
161	CB-000024422	2427430002	WIRE HARNESS 20/30P H/H 2725#28+128C L=150	P981		1
162	#N/A	2360100696	XISTOR,PNP R SMD PMBS3906 SOT-23 PHILIPS	Q101 RA Q102 RA Q103 RA Q107 RA Q108 RA Q804 RA		6
163	E-Q-0402-1607	2360100796	XISTOR,PNP R SMD MMBT3906 SOT-23 DIODES	Q101 RB Q102 RB Q103 RB Q107 RB Q108 RB Q804 RB		6
164	E-Q-0402-1375	2360100396	XISTOR,PNP R SMD MMBT3906-7 SOT-23 VISHAY	Q101 RC Q102 RC Q103 RC Q107 RC Q108 RC Q804 RC		6
165	#N/A	2360501396	FET,P-CH SMD AP2305N SOT-23 APEC	Q104 RA		1
166	#N/A	2360501296	FET,P-CH SMD AO3411 SOT-23 ALPHA	Q104 RB		1
167	E-Q-0402-1624	2360301696	XISTOR,NPN R SMD PMBS3904 SOT-23 PHILIPS	Q106 RA Q802 RA		2
168	E-Q-0402-1180	2360301296	XISTOR,NPN R SMD MMBT3904 SOT-23 DIODES	Q106 RB Q802 RB		2
169	E-Q-0402-1087	2360301896	XISTOR,NPN R SMD MMBT3904LT1 SOT-23 LRC	Q106 RC Q802 RC		2
170	E-Q-0402-1378	2360300596	XISTOR,NPN R SMD MMBT3904-7 SOT-23 VISHAY	Q106 RD Q802 RD		2
171	E-Q-0402-1376	2360300296	XISTOR,NPN R SMD HMBT3904 SOT-23 HI-SIN	Q106 RE Q802 RE		2
172	E-00004445	2361611200	FET,N-CH AP04N70BF-A TO-220FM APEC	Q801 RA		1
173	E-00002345	2361610700	FET,N-CH SSS4N60B TO-220F FAIRCHILD	Q801 RB		1
174	E-00002346	2361611700	FET,N-CH FQPF5N60C TO-220F FAIRCHILD	Q801 RC		1
175	E-00004446	2361611800	FET,N-CH AP03N70F-H TO-220FM APEC	Q801 RD		1
176	E-Q-0402-0356	2361315391	XISTOR,NPN R 2SC2001-L TO-92 NEC	Q803 RA		1
177	E-Q-0402-1526	2361412691	XISTOR,NPN A KSD1616A-G TO-92 FAIRCHILD	Q803 RB		1
178	#N/A	2360608496	FET,N-CH(SMD) 2N7002K SOT-23 VISHAY	Q901 RA Q902 RA		2
179	#N/A	2360609096	FET,N-CH(SMD) 2N7002K SOT-23 PHILIPS	Q901 RB Q902 RB		2
180	#N/A	2360609196	FET,N-CH(SMD) 2N7002L SOT-23 ON	Q901 RC Q902 RC		2
181	E-Q-0402-0718	2361316191	XISTOR,NPN R 2PC945P TO-92 PHILIPS	Q903 RA Q905 RA		1
182	E-Q-0402-0428	2361302591	XISTOR,NPN R 2SC945-P TO-92 NEC	Q903 RB Q905 RB		2
183	E-Q-0402-0555	2361313691	XISTOR,NPN R KSC945CGTA TO-92 FAIRCHILD	Q903 RC Q905 RC		2
184	E-R-0405-6409	2253210196	RES,CHIP 1/10W RC 0603 1/10W 100 ohm J T	R103 R106 R108 R110 R112 R114 R116 R120 R134 R135 R144 R145 R150 R151 R152 R153 R154 R155 R156 R172 R176 R177 186		23
185	#N/A	2251275096	RES,CHIP 1/10 RC 0603 1/10W 75 ohm F T	R104 R109 R113		3
186	E-R-0405-6604	2253222296	RES,CHIP 1/10W RC 0603 1/10W 2.2Kohm J T	R118 R119 R139 R140		4
187	E-R-0405-6411	2253210396	RES,CHIP 1/10W RC 0603 1/10W 10Kohm J T	R121 R122 R171 R180		4

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
188	E-R-0405-6410	2253210296	RES,CHIP 1/10W RC 0603 1/10W 1Kohm J T	R123 R124 R133 R161 R188 R192		6
189	E-R-0405-6601	2253210596	RES,CHIP 1/10W RC 0603 1/10W 1Mohm J T	R127 R158		2
190	E-R-0405-6419	2253247296	RES,CHIP 1/10W RC 0603 1/10W 4.7Kohm J T	R128 R129 R149 R157 R159 R163 R173		7
191	#N/A	2251290916	RES,CHIP 1/10 RC 0603 1/10W 9.09Kohm F T	R141		1
192	#N/A	2251233216	RES,CHIP 1/10 RC 0603 1/10W 3.32Kohm F T	R147		1
193	E-R-0405-7000	2253222196	RES,CHIP 1/10W RC 0603 1/10W 220 ohm J T	R182		1
194	E-R-0405-5988	2253300096	RES,CHIP 1/8 RC 0805 1/8 W 0ohm J T	R189		1
195	E-R-0405-6605	2253227296	RES,CHIP 1/10W RC 0603 1/10W 2.7Kohm J T	R191		1
196	E-TH-0416-0042	2229201212	THERMISTOR,PTH SCK-103 10+-20% 3A THINKING	R802		1
197	#N/A	2253456496	RES,CHIP 1/4 RC 1206 1/4 W 560Kohm J T	R803 R804 R805 R830 R835		5
198	#N/A	2232656395	RES,CBN 1/2 RD 1/2W 56Kohm J T52	R806		1
199	E-R-0405-2715	2233422095	RES,CBN 1/4 S RD 1/4WS 22 ohm J T52	R807 R817 R832		3
200	#N/A	2251410036	RES,CHIP 1/4 RC 1206 1/4 W 100Kohm F T	R808		1
201	E-R-0405-3216	2233447095	RES,CBN 1/4 S RD 1/4WS 47 ohm J T52	R809		1
202	#N/A	2253410096	RES,CHIP 1/4 RC 1206 1/4 W 10ohm J T	R810		1
203	#N/A	2251440286	RES,CHIP 1/4 RC 1206 1/4 W 4.02 ohm F T	R813 R814 R815 R816		4
204	E-R-0405-2725	2233410095	RES,CBN 1/4 S RD 1/4WS 10 ohm J T52	R818 R831 R910		3
205	E-R-0405-3441	2233412395	RES,CBN 1/4 S RD 1/4WS 12Kohm J T52	R819		1
206	E-R-0405-0727	2239222015	RES,PRE 1/4 S RN 1/4WS 2.2Kohm F T52	R820		1
207	#N/A	2239210005	RES,PRE 1/4 S RN 1/4WS 100 ohm F T52	R821		1
208	#N/A	2239227415	RES,PRE 1/4 S RN 1/4WS 2.74Kohm F T52	R822		1
209	E-R-0405-0748	2239220025	RES,PRE 1/4 S RN 1/4WS 20Kohm F T52	R823		1
210	#N/A	2232412295	RES,CBN 1/4 RD 1/4W 1.2Kohm J T52	R824		1
211	#N/A	2235647013	RES,MTL 3 RS 3WS 47 ohm J P=20.0	R826		1
212	E-R-0405-1757	2233410195	RES,CBN 1/4 S RD 1/4WS 100 ohm J T52	R827		1
213	E-R-0405-3214	2233410395	RES,CBN 1/4 S RD 1/4WS 10Kohm J T52	R828		1
214	#N/A	2253433296	RES,CHIP 1/4 RC 1206 1/4 W 3.3Kohm J T	R829 R841		2
215	#N/A	2253410296	RES,CHIP 1/4 RC 1206 1/4 W 1Kohm J T	R833 R839		2
216	#N/A	2251453636	RES,CHIP 1/4 RC 1206 1/4 W 536Kohm F T	R836 R837 R838		3
217	E-00003854	2253427196	RES,CHIP 1/4 RC 1206 1/4 W 270 ohm J T	R840		1
218	E-R-0405-3443	2233447995	RES,CBN 1/4 S RD 1/4WS 4.7 ohm J T52	R901 R902		2
219	#N/A	2253351596	RES,CHIP 1/8 RC 0805 1/8 W 5.1Mohm J T	R903		1
220	E-R-0405-5989	2253310096	RES,CHIP 1/8 RC 0805 1/8 W 10 ohm J T	R904 R905 R911		3
221	#N/A	2239282525	RES,PRE 1/4 S RN 1/4WS 82.5Kohm F T	R906		1
222	#N/A	2239290925	RES,PRE 1/4 S RN 1/4WS 90.9Kohm F T	R907		1
223	#N/A	2251310036	RES,CHIP 1/8 RC 0805 1/8 W 100Kohm F T	R908		1
224	#N/A	2253310596	RES,CHIP 1/8 RC 0805 1/8 W 1Mohm J T	R909 R920		2
225	E-R-0405-2367	2233422295	RES,CBN 1/4 S RD 1/4WS 2.2Kohm J T52	R912		1
226	E-R-0405-3221	2233410495	RES,CBN 1/4 S RD 1/4WS 100Kohm J T52	R913		1
227	E-R-0405-0946	2233412295	RES,CBN 1/4 S RD 1/4WS 1.2Kohm J T52	R915		1
228	#N/A	2242330595	HIGH VOLTAGE RESISTOR RD 1/2W 3.0Mohm J T52	R917		1
229	#N/A	2251349916	RES,CHIP 1/8 RC 0805 1/8W 4.99Kohm F T	R918		1
230	#N/A	2251341206	RES,CHIP 1/8 RC 0805 1/8W 412 ohm F T	R921		1
231	#N/A	2251335706	RES,CHIP 1/8 RC 0805 1/8 W 357 ohm F T	R924		1
232	E-R-0405-7116	2253400096	RES,CHIP 1/4 RC 1206 1/4 W 0ohm J T	R925		1
233	#N/A	2259210308	RES,CHIP NETWORKS 8P4R 1/16W 10Kohm J P=0.8	RN1 RN2 RN4		3
234	#N/A	2403702513	SWITCH,TACT TSTA-2 4.3mm 160g HUA-JIE	S701 S702 S703 S704 S705		5
235	#N/A	2407413100	SOCKET (AC INLET) 0711-2-P10-9 INALWAYS	S801 RA		1
236	#N/A	2407413300	SOCKET (AC INLET) SC-8R-F15A9 SUPERCOM	S801 RB		1
237	#N/A	2407200991	HOLDER,FUSE CQ-05T (5mm DIA FUSE) CONQUER	S802 S803		2
238	#N/A	2374228004	XFORMER,POWR ER-28 2UEW 0.27*2 32Ts 1.8mH	T801		1
239	#N/A	2374300700	XFORMER INVERTER EEL-19 16/2080Ts 0.4/0.045mm	T901		1
240	#N/A	2202518500	PCB MULTILAYER 17" LVDS M/B FR4*2 100*80	U101		1
241	#N/A	2202127100	PC BOARD VA521 KEY/B FR1 115*31	U701		1
242	#N/A	2202130400	PC BOARD JT166W18-1 P/B FR1 160*100	U801		1
243	E-00003624	2212008201	LCD PANEL HSD150MX17-A00 (A-) 16ms HSD	V901		1
244	E-X-0415-0119	2369103601	XTAL,OSC 12.000MHZ/49US 0.1mW/30pF	X101		1
245	E-X-0415-0112	2369103901	XTAL,OSC 24.576MHZ/49US 0.1mw/20pF	X102		1

8. Exploded Diagram And Spare Parts List (VE510s-4/VE510b-4)



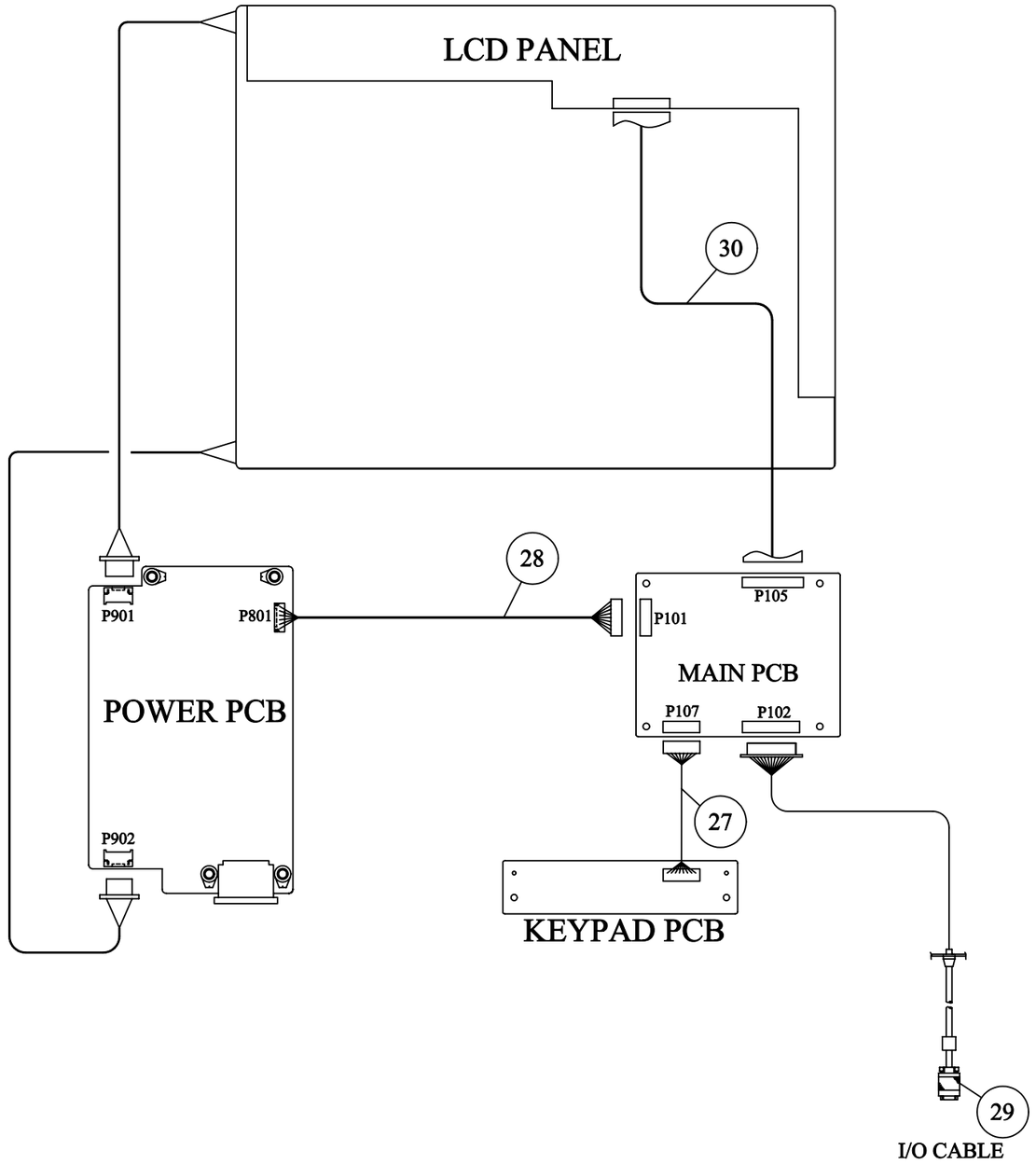
EXPLODED PARTS LIST (VE510b/s-4)

ViewSonic Model Number: VLCDS27996-3W/2W

Rev: 1a

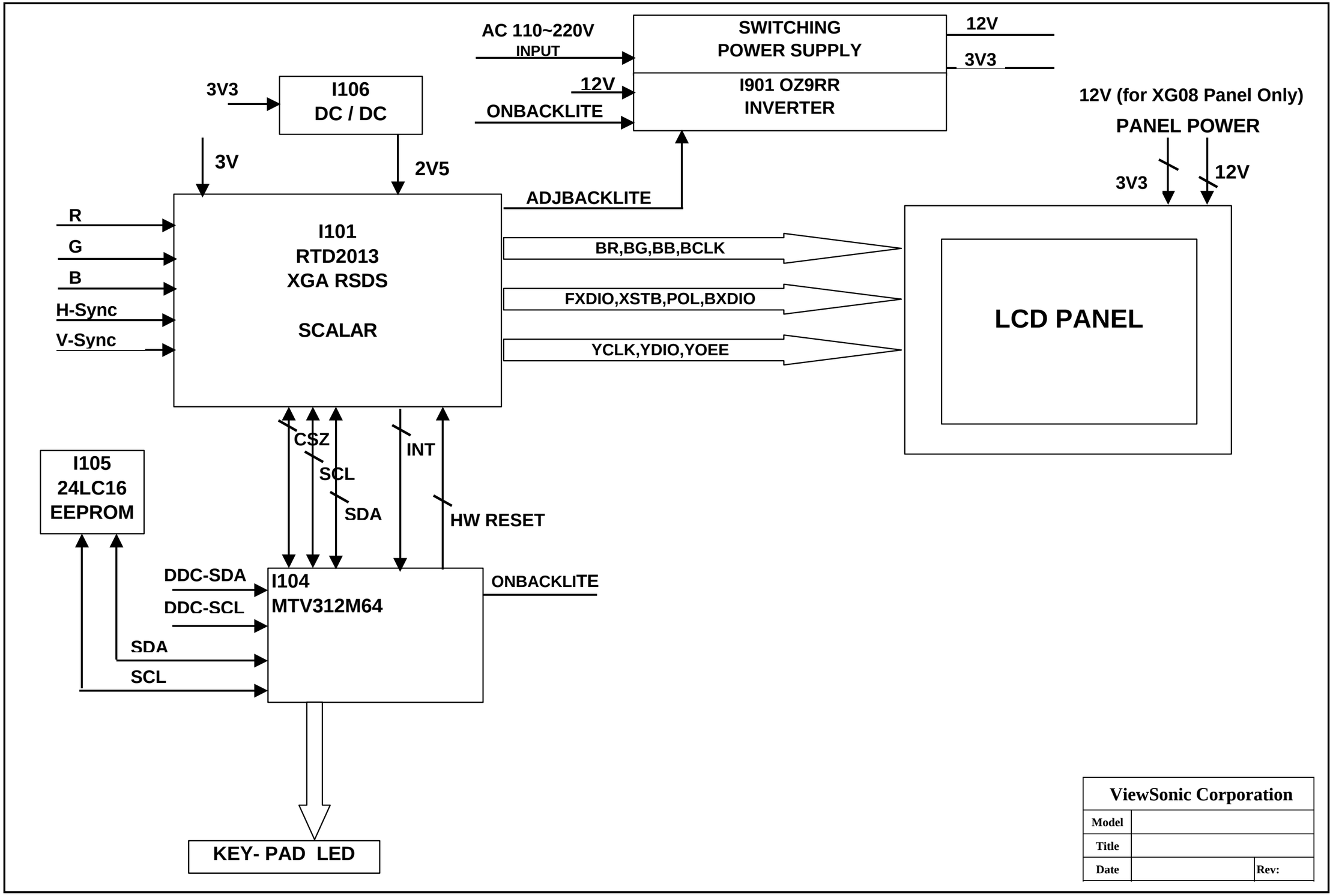
Serial No. Prefix: PUJ / PUK

Item	ViewSonic P/N	Ref. P/N	Description		Q'ty
1-1	C-FP-0301-0993	2024266703P	FRONT BEZEL	ABS 94HB PS-7604B/C4001	1
1-2	C-FP-0301-0991	2024266704P	FRONT BEZEL	ABS 94HB MIDNIGHT GRAY	1
2	#N/A	2071969100P	METAL FITTG	SECC T=0.8MM CPT XP02 PANEL	1
3	M-MS-0808-9219	2072456900P	INSULATOR	MYLAR BLACK 94V0 T=0.5 POWER	1
4	M-SCW-0824-6715	2080002200P	SCREW,SPE	L355 M3x6 DH NICKEL-PLATED	4
5	M-SCW-0824-6820	2085740062P	SCREW,B OTW+	B,OTW+,M4x6	1
6	M-MS-0808-9220	2071668700P	SHIELD PLATE	SPTE T=0.3MM FOR MAIN BOARD	1
7	M-SCW-0824-6719	2082630062P	SCREW	M3X6 P=0.5	1
8	M-SCW-0824-0811	2080003700P	SCREW,SPE	ISZZTER001A M3*6L MSWR17/FZMYI	4
9	M-SCW-0824-0811	2080003700P	SCREW,SPE	ISZZTER001A M3*6L MSWR17/FZMYI	4
10	M-MS-0808-9221	2072457000P	INSULATOR	MYLAR BLACK 94V0 T=0.5 SIGNAL	1
11	M-MS-0808-9222	2071670400P	SHIELD PLATE	SPTE T=0.3MM (TOP)	1
12	M-MS-0808-9223	2071670500P	SHIELD PLATE	SPTE T=0.3MM (DOWN)	1
13	M-SCW-0824-6719	2082630062P	SCREW	M3X6 P=0.5	1
14-1	C-BC-0302-0583	2022262202P	CABI BACK	ABS 94HB PANTONE BLACK C=4001	1
14-2	C-BC-0302-0597	2022262203P	CABI BACK	ABS 94HB MIDNIGHT GRAY	1
15-1	#N/A	2051352203P	NAME PLATE	V LOGO/ABS 94HB BLACK C	1
15-2	M-MS-0808-9396	2051352202P	NAME PLATE	NAME PLATE VIEWSONIC E015-027	1
16	M-MS-0808-9216	2106656300P	HINGE	VA521 -5'~+20'(F.S)	1
17	M-MS-0808-9224	2105251600P	SPRING PLATE	VA521 PB-CU T=0.2MM	1
18	M-SCW-0824-0285	2084730082P	SCREW,BND T+	M3X8(BND T+)	6
19	M-SCW-0824-6745	2084740104P	SCREW,BND T+	M4X10(BND T+) (BLK)	2
20-1	PL-PS-0715-0986	2028258002P	STAND	ABS94HB PANTONE BLACK C=4001	1
20-2	PL-PS-0715-0992	2028258003P	STAND	ABS 94HB MIDNIGHT GRAY	1
21	M-MS-0808-9225	2071969200P	METAL FITTG	SECC T=1MM STAND	1
22	PL-PD-0714-0113	2039819301P	FOOT PAD	RUBBER O20*2TMM SQUARE GRAIN	5
23	M-SCW-0824-0123	2084740102P	SCREW,BND T+	M4X10(BND T+)	2
24	M-SCW-0824-0812	2084730062P	SCREW,BND T+	M3X6(BND T+)	2
25	M-SCW-0824-0440	2085740102P	SCREW,B OTW+	SCREW, B 0TW+ M4*10	4
26	M-CV-0830-0281	2027258402P	DUST COVER	VA521 ABS 94HB AL-PALTE	2
27	M-WR-0828-6626	2427408181P	WIRE HARNESS	8/8P H/B 1061#26 L=180mm P=2.0	1
28	#N/A	2427409001P	WIRE HARNESS	9/9P H/B 1007#26 L=80mm P=2.0	1
29	A-VIO-0118-0034	2427501174P	I/O CABLE	D15/C13 20276(3+6) 1.83M BLK EMI	1
30	CB-000024422	2427430002P	WIRE HARNESS	20/30P H/H 2725#28+128C L=150	1



ViewSonic Corporation		
Model		
Title		
Date		Rev:

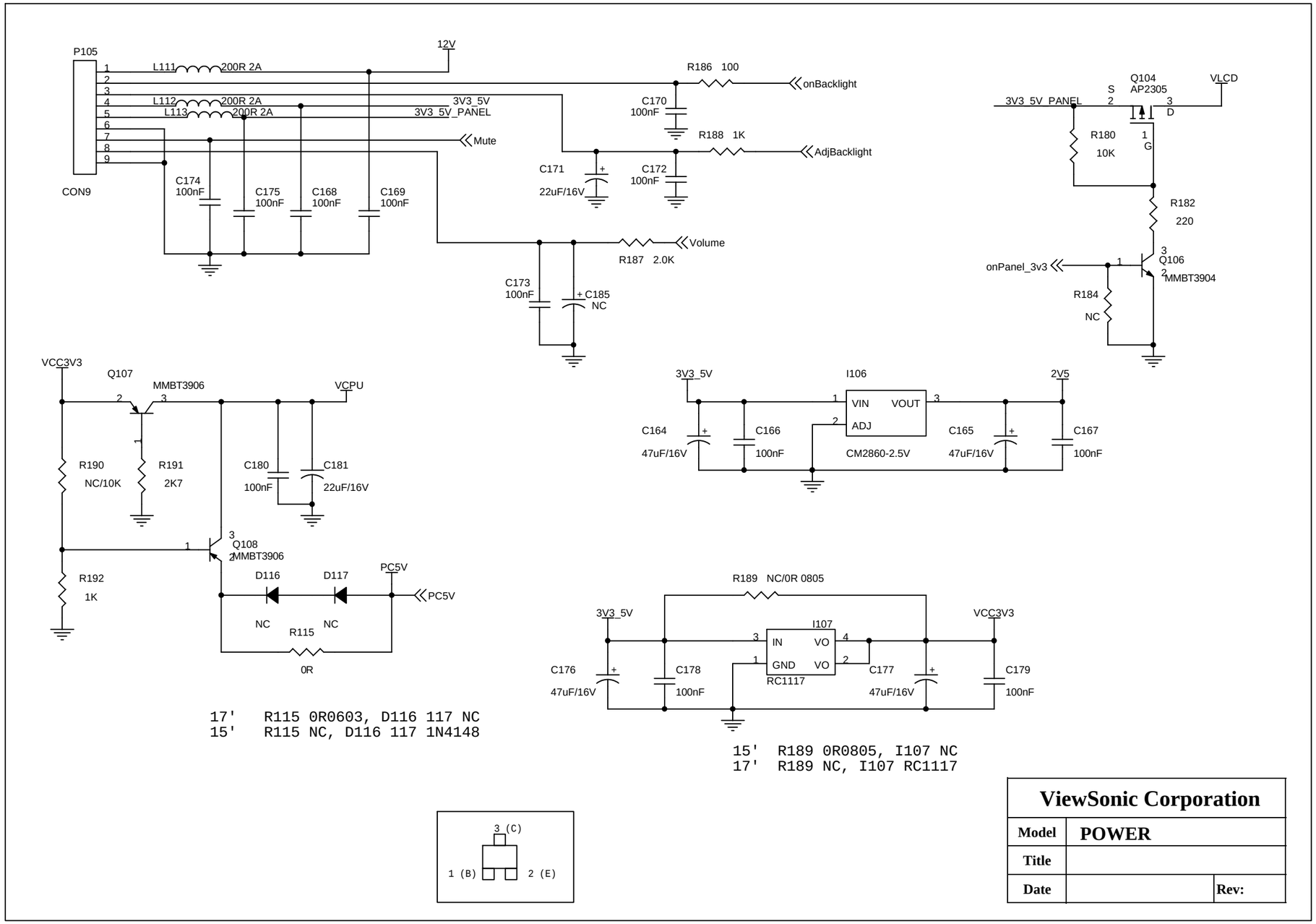
9. Block Diagram (VE510s-4/VE510b-4)



ViewSonic Corporation		
Model		
Title		
Date		Rev:

10. Schematic Diagrams (VE510s-4/VE510b-4)

10.1. Power

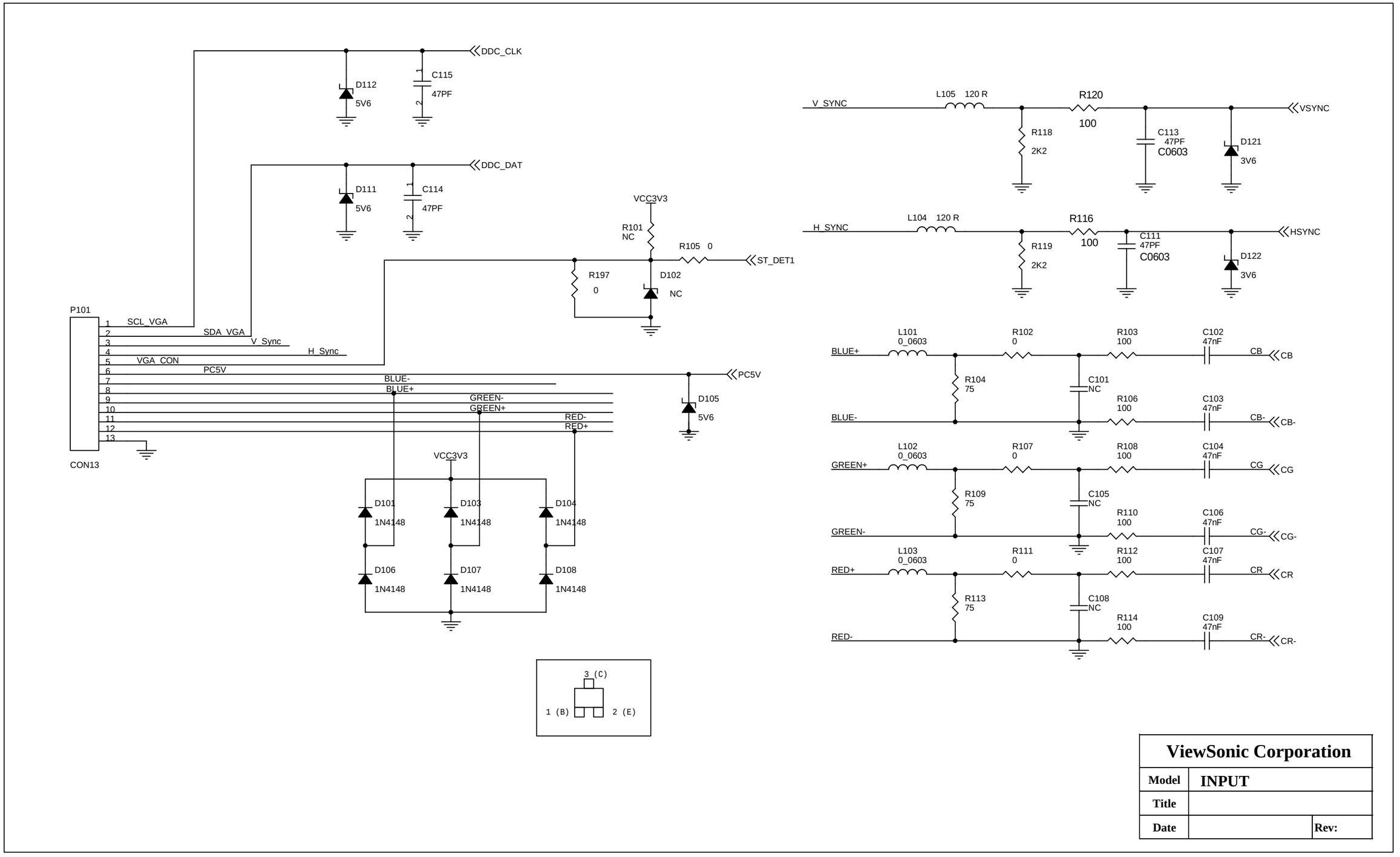


17' R115 0R0603, D116 117 NC
15' R115 NC, D116 117 1N4148

15' R189 0R0805, I107 NC
17' R189 NC, I107 RC1117

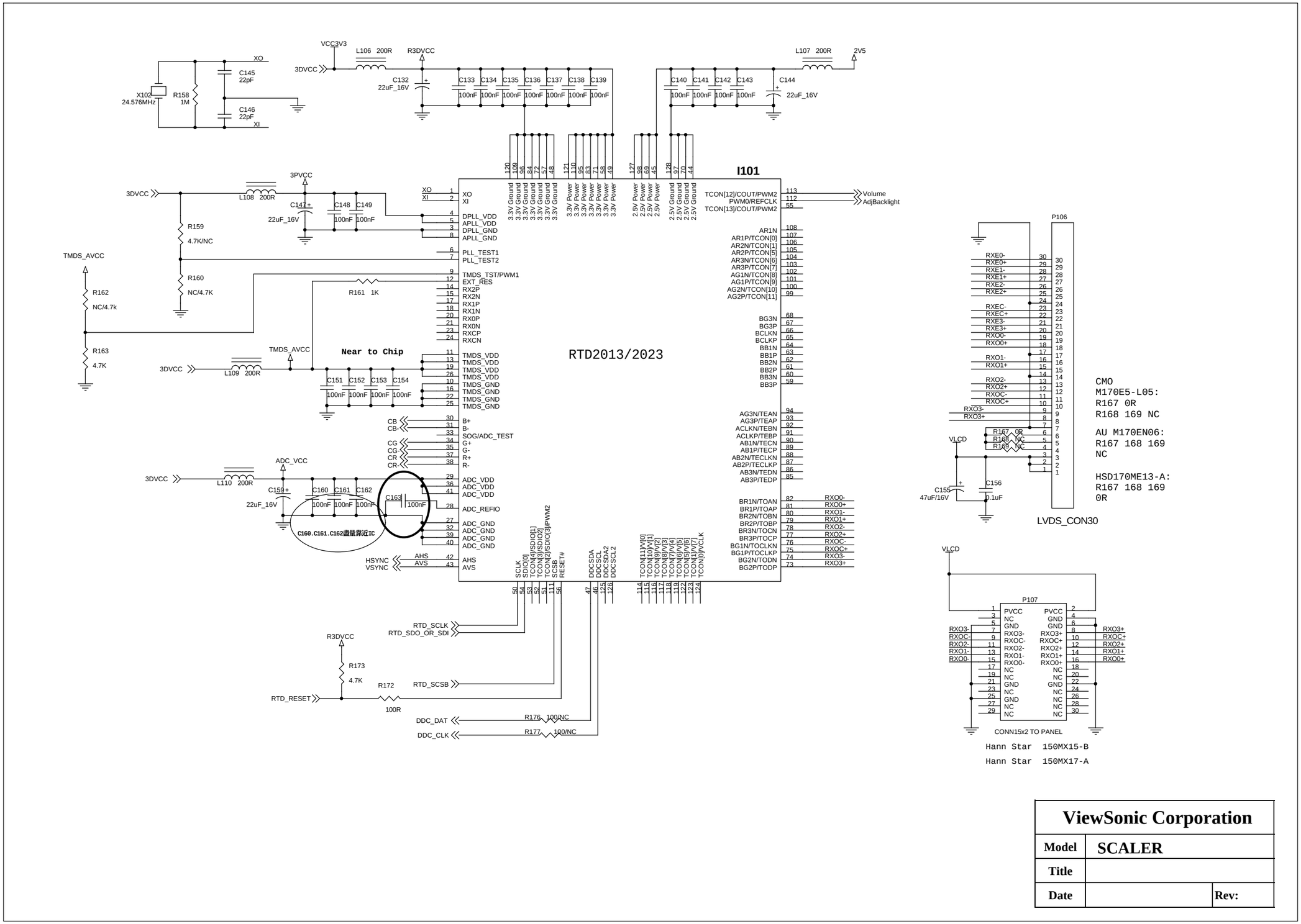
ViewSonic Corporation		
Model	POWER	
Title		
Date		Rev:

10.2. Input



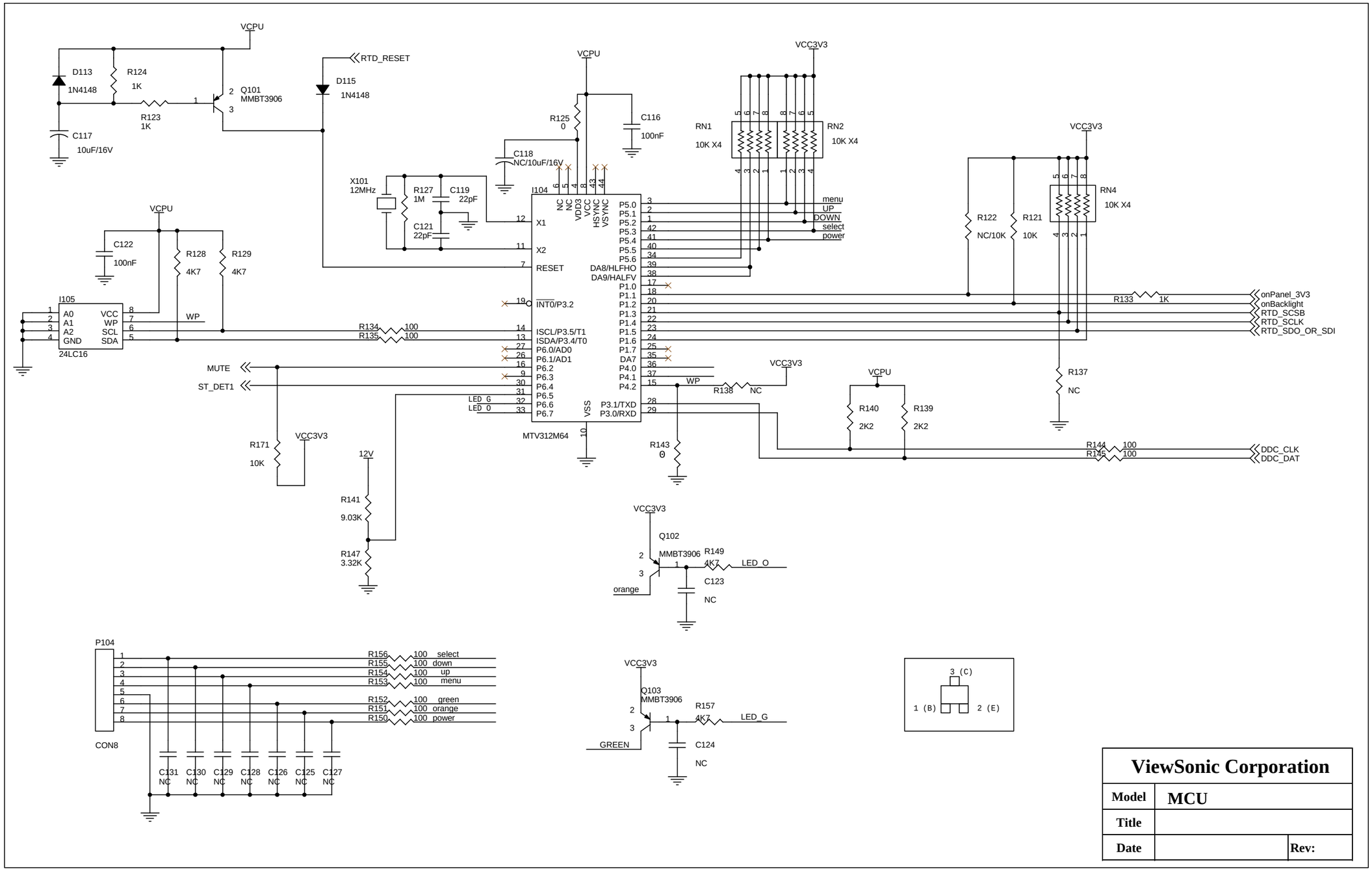
ViewSonic Corporation		
Model	INPUT	
Title		
Date		Rev:

10.3. Scaler

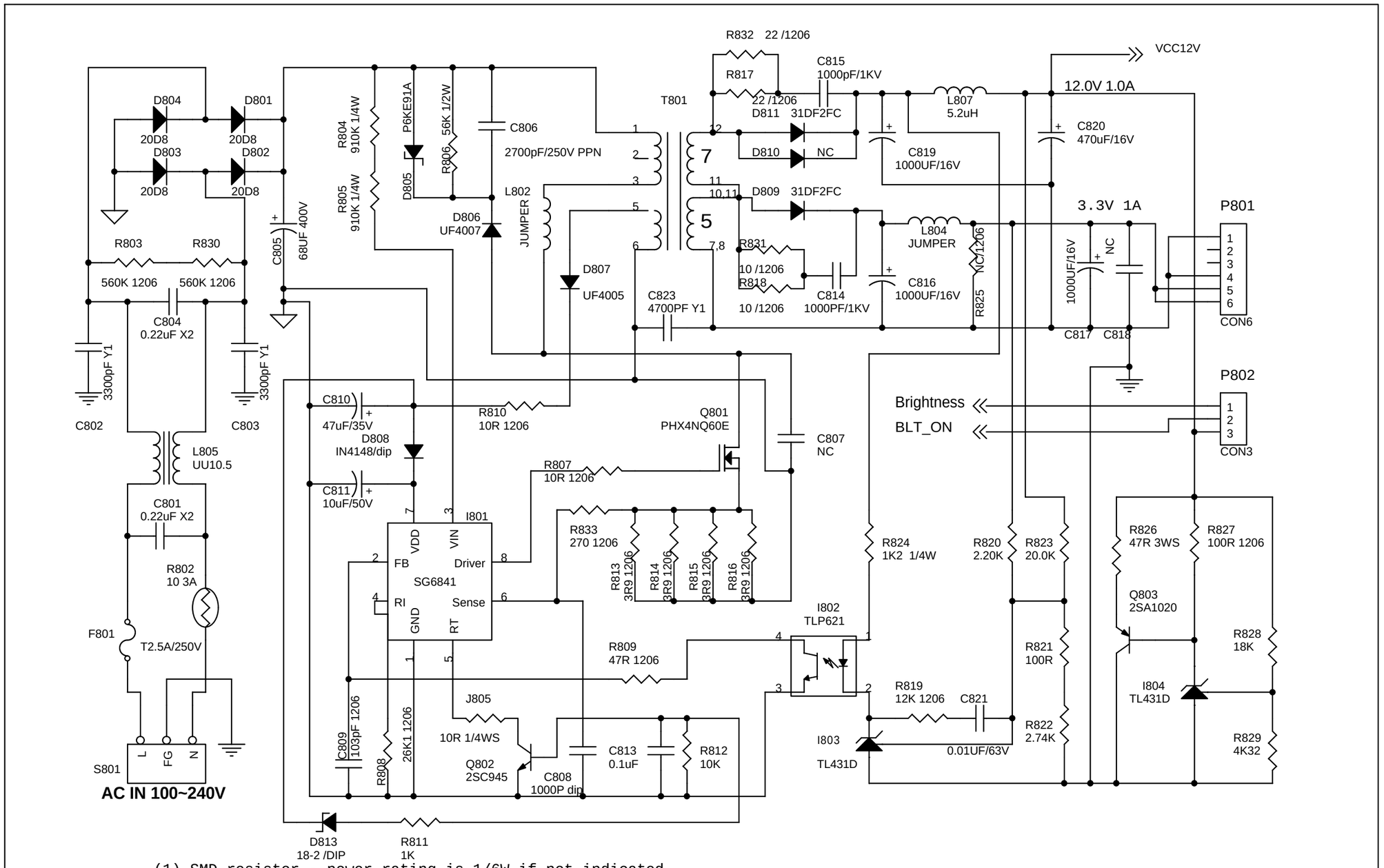


ViewSonic Corporation		
Model	SCALER	
Title		
Date		Rev:

10.4. MCU


VCPU
D113
1N4148
R124
1K
R123
1K
Q101
MMBT3906
C117
10uF/16V
RTD_RESET
D115
1N4148
VCPU
R125
0
C116
100nF
C118
NC/10uF/16V
VCC3V3
RN1
10K X4
RN2
10K X4
X101
12MHz
R127
1M
C119
22pF
C121
22pF
I104
NC
NC
VDD3
VCC
HSYNC
VSYNC
P5.0
P5.1
P5.2
P5.3
P5.4
P5.5
P5.6
DA8/HLFHO
DA9/HALFV
P1.0
P1.1
P1.2
P1.3
P1.4
P1.5
P1.6
P1.7
DA7
P4.0
P4.1
P4.2
P3.1/TXD
P3.0/RXD
VSS
X1
X2
RESET
INT0/P3.2
ISCL/P3.5/T1
ISDA/P3.4/T0
P6.0/AD0
P6.1/AD1
P6.2
P6.3
P6.4
P6.5
P6.6
P6.7
MTV312M64
menu
UP
DOWN
select
power
VCPU
C122
100nF
R128
4K7
R129
4K7
I105
A0
A1
A2
GND
VCC
WP
SCL
SDA
24LC16
WP
R134
R135
100
100
MUTE
ST_DET1
LED_G
LED_O
R171
10K
VCC3V3
12V
R141
9.03K
R147
3.32K
VCC3V3
R138
NC
WP
VCPU
R140
2K2
R139
2K2
R143
0
VCC3V3
R122
NC/10K
R121
10K
RN4
10K X4
R133
1K
onPanel_3V3
onBacklight
RTD_SCSB
RTD_SCLK
RTD_SDO_OR_SDI
R137
NC
R144
R145
100
100
DDC_CLK
DDC_DAT
VCC3V3
Q102
MMBT3906
R149
4K7
LED_O
C123
NC
orange
P104
CON8
R156
R155
R154
R153
R152
R151
R150
100 select
100 down
100 up
100 menu
100 green
100 orange
100 power
C131
C130
C129
C128
C126
C125
C127
NC
VCC3V3
Q103
MMBT3906
R157
4K7
LED_G
C124
NC
GREEN
3 (C)
1 (B)
2 (E)
ViewSonic Corporation
Model
MCU
Title
Date
Rev:

10.5. A-D Power

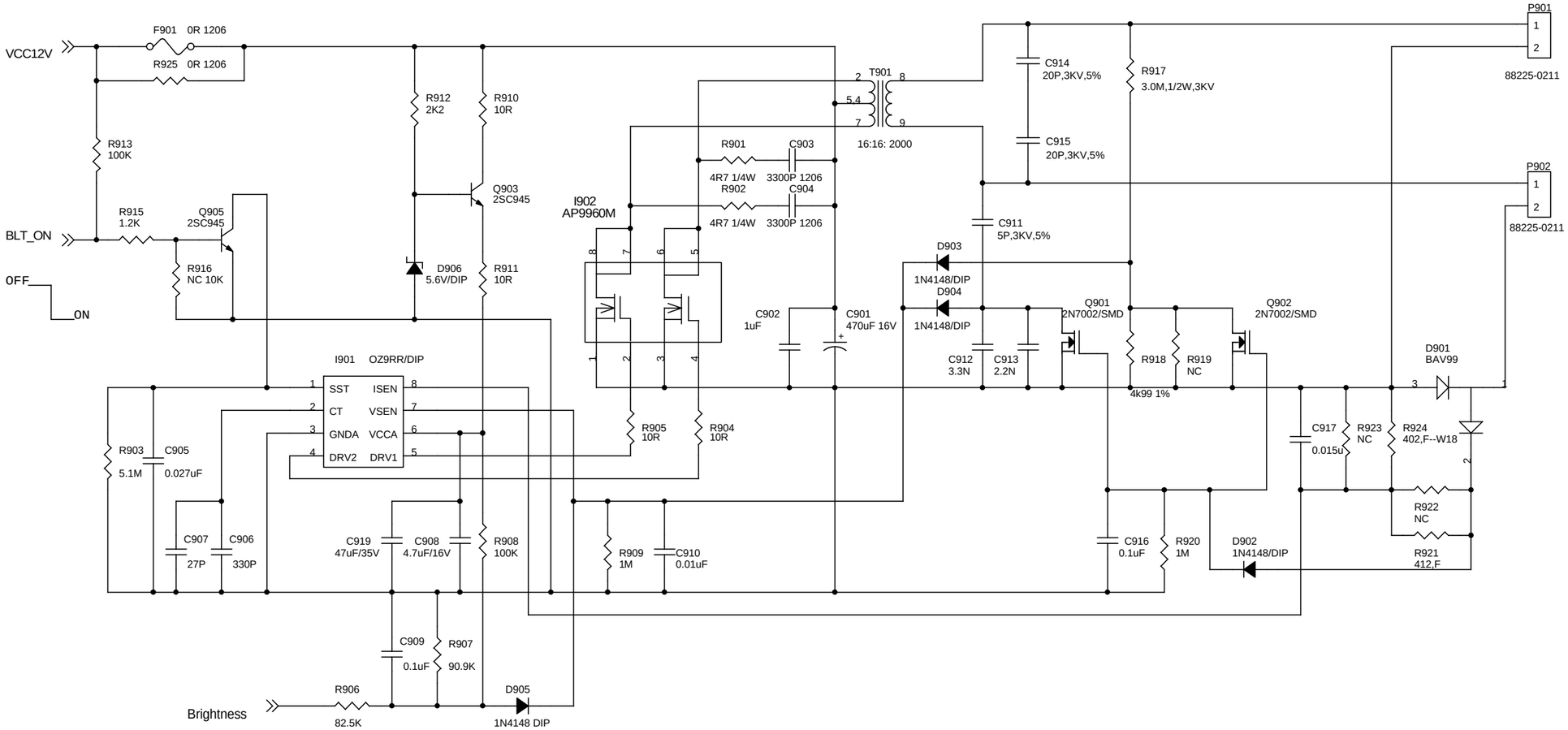


(1) SMD resistor - power rating is 1/6W,if not indicated

(2) SMD capacitpr - temperture is 85'C & voltage is 50V,if not indicated.

ViewSonic Corporation		
Model	A-D POWER	
Title		
Date		Rev:

10.6. Inverter

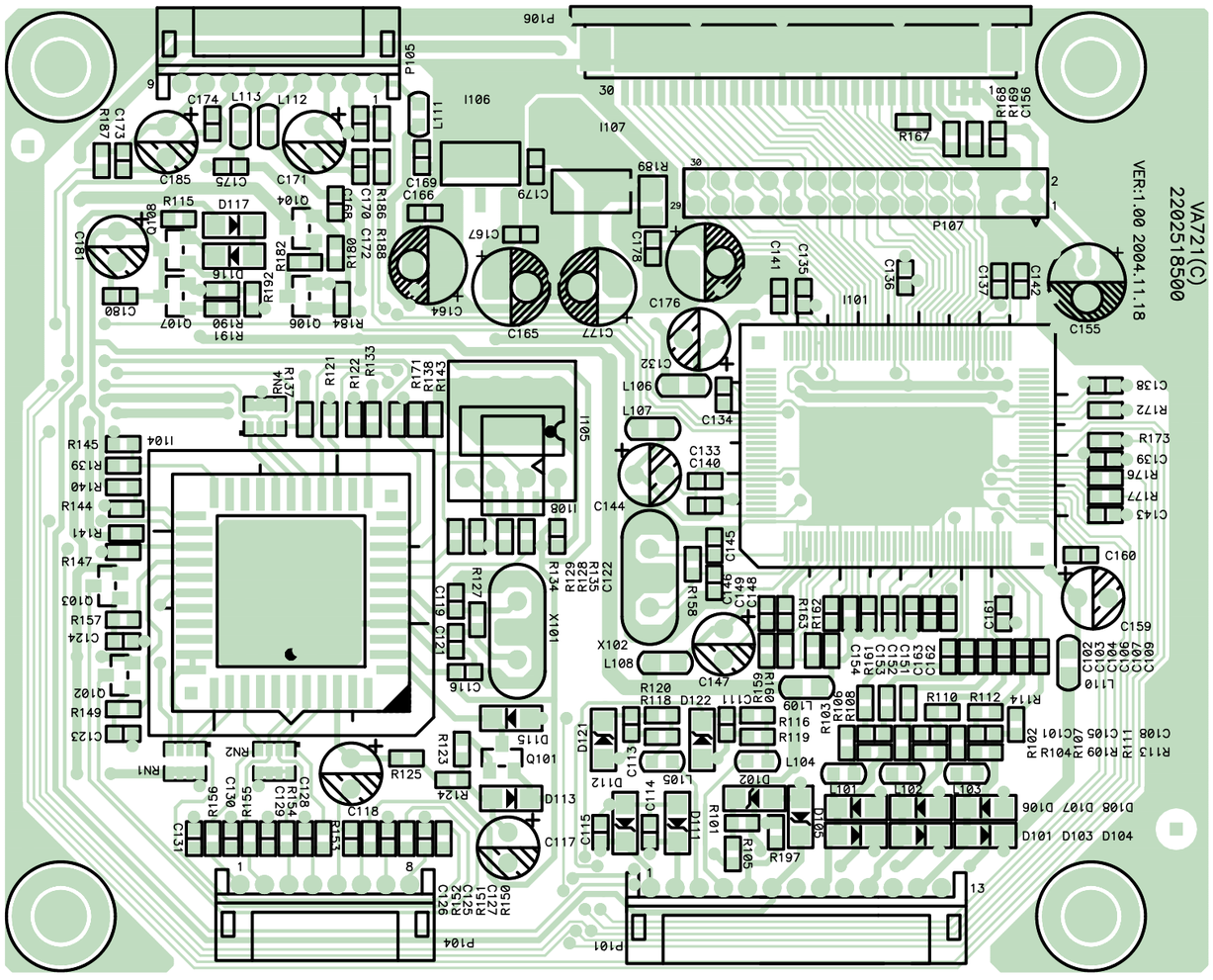


(1) SMD resistor - power rating is 1/8W,if not indicated
(2) SMD capacitpr - temperture is 85'C & voltage is 50V,if not indicated.
(3)R913 100K, R915 1.2K,R916 NC for CPT XP02, R913 ONLY ON PCB AFTER VERSION 2.02
(4)R915 100ohm, R916 10K,R913 NC for CPT XG08

ViewSonic Corporation		
Model	INVERTER	
Title		
Date		Rev:

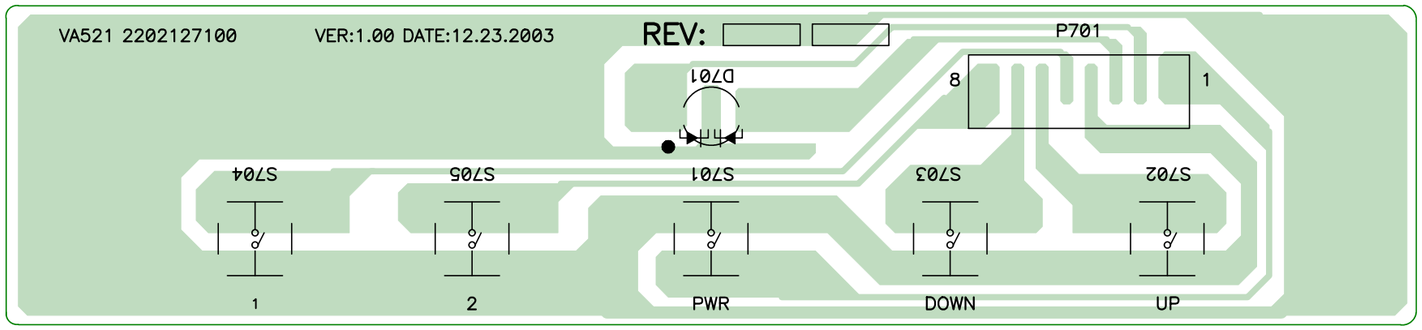
11. PCB Layout Diagrams

11.1. MAIN PCB TOP VIEW

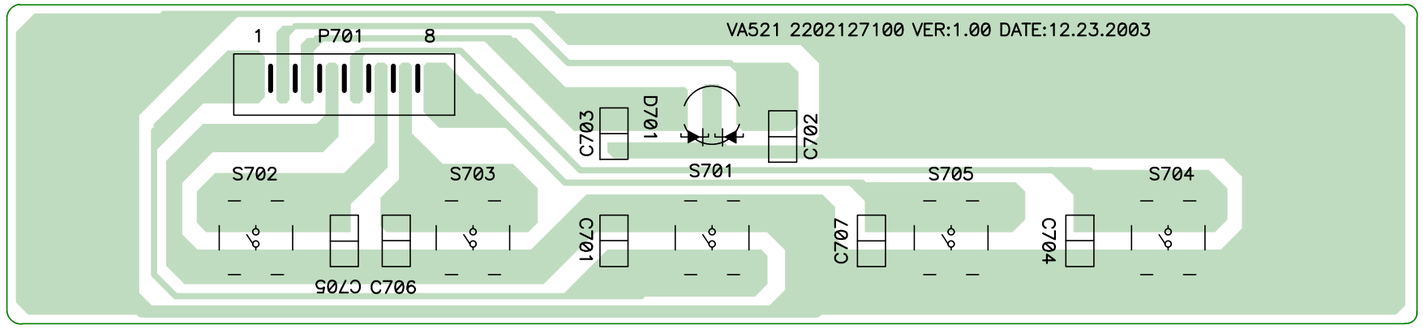


11.2. MAIN PCB BOTTOM VIEW

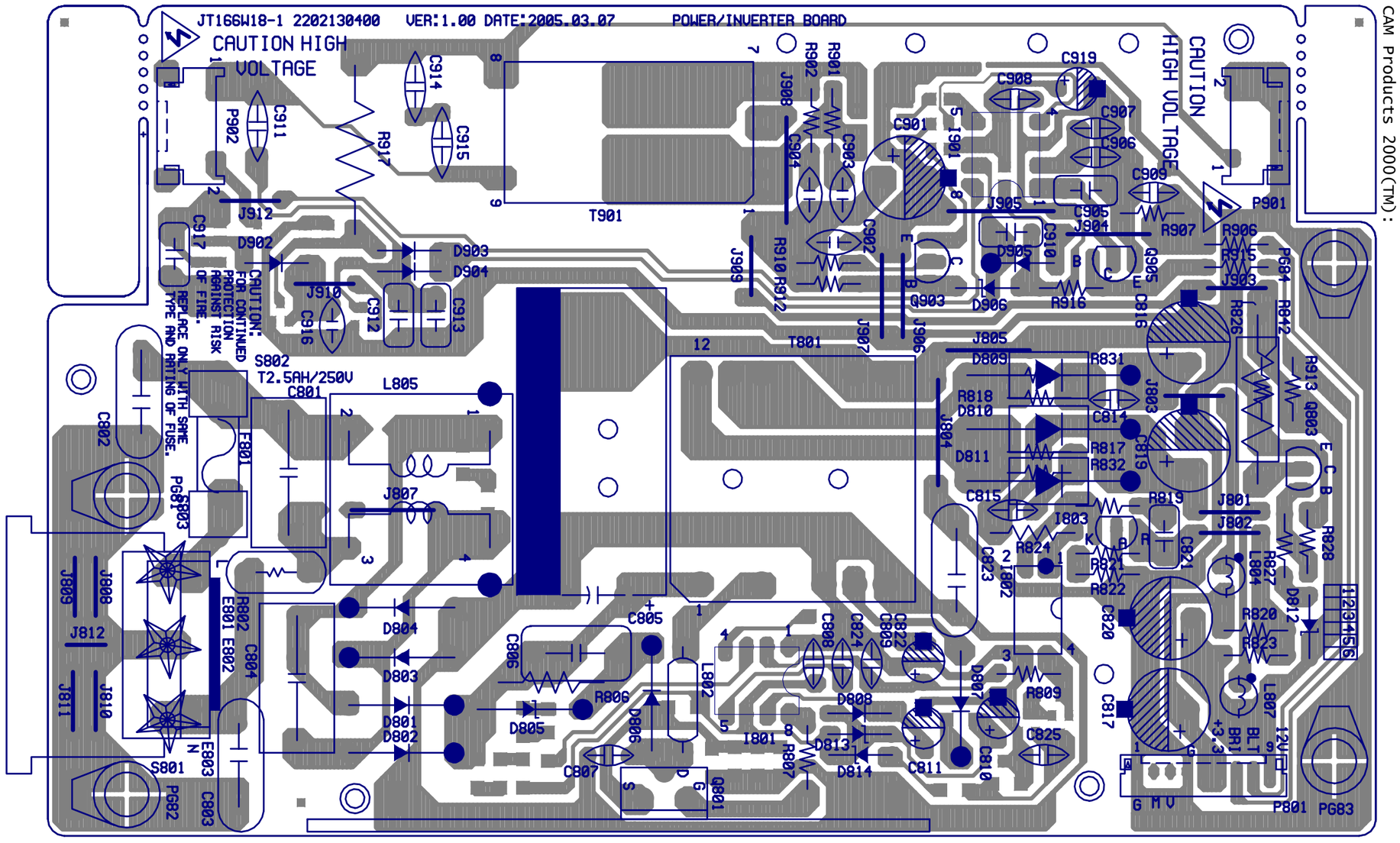
11.3. CON PCB TOP VIEW



11.4. CON PCB BOTTOM VIEW

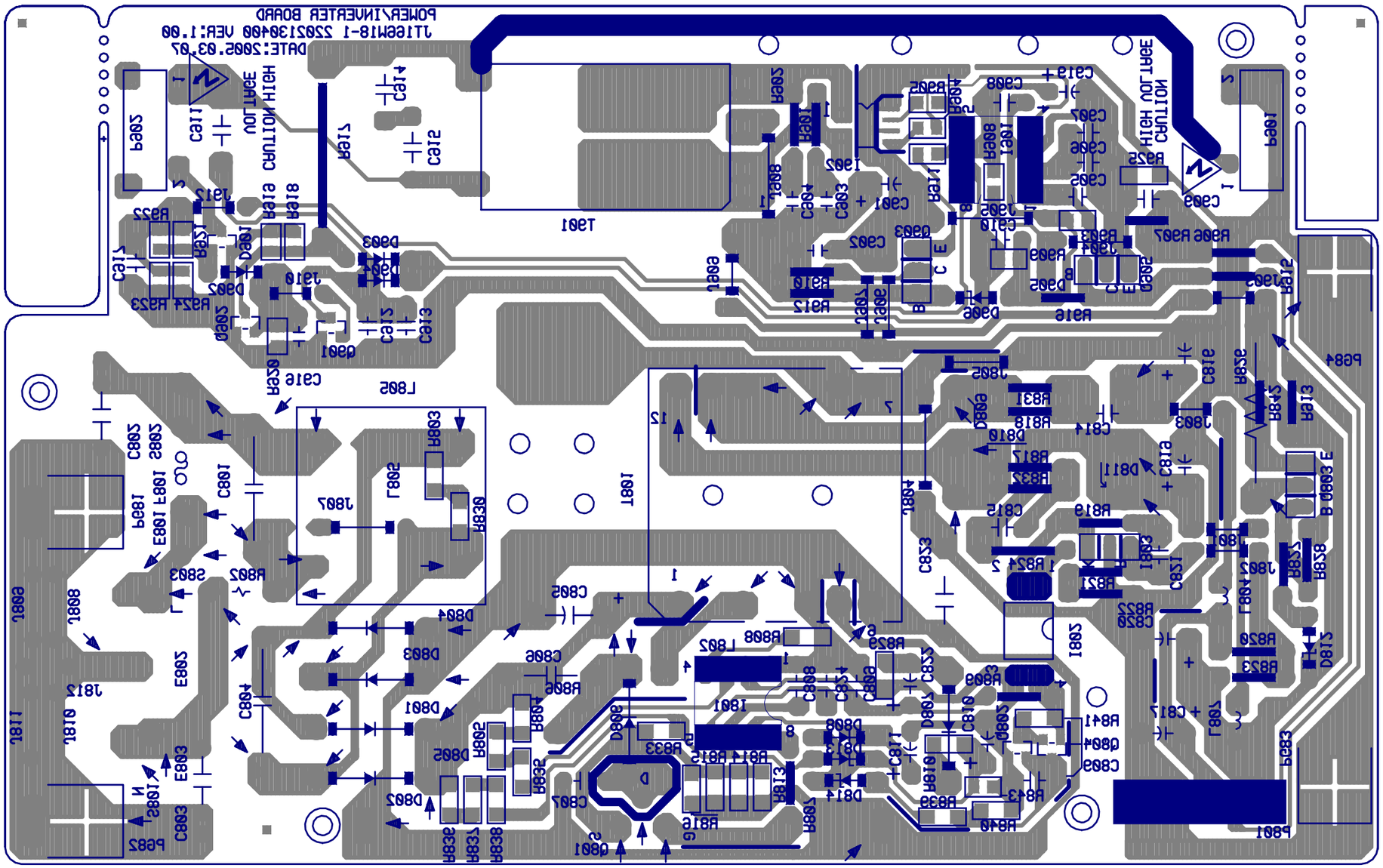


11.5. POWER PCB TOP VIEW



CAM Products 2000(TM):

11.6. POWER PCB BOTTOM VIEW



Reader's Response

Dear Readers:

Thank you in advance for your feedback on our Service Manual, which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A. What do you think about the content of this Service Manual?

Unit	*Excellent*	*Good*	*Fair*	*Bad*
1. Precautions and Safety Notices				
2. Specification				
3. Front Panel Function Control Description				
4. Circuit Description				
5. Adjustment Procedure				
6. Troubleshooting Flow Chart				
7. Recommended Spare Parts List				
8. Exploded Diagram and Exploded Parts List				
9. Block Diagram				
10. Schematic Diagrams				
11. PCB Layout Diagrams				

B. Are you satisfied with this Service Manual?

Item	*Excellent*	*Good*	*Fair*	*Bad*
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C. Do you have any other opinions or suggestions regarding this service manual?

Reader's basic data:

Name:		Title:	
Company:			
Add.:			
Tel:		Fax:	
E-mail:			

After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943. You may also e-mail any suggestions to the Director, Quality Systems & Processes (marc.maupin@viewsonic.com)